services that have less negative impact on the environment. This also encourages tourism businesses to pay more attention to environmental protection. I believe that small changes can make a big difference when many tourism businesses use modern technology. By saving energy, reducing waste, and using natural resources carefully, the tourism industry can become more sustainable and provide a better environment for future generations.

Conclusion

I believe that technological advancements are everywhere, bringing many advantages to every person and place. As I have mentioned, technologies are beneficial in many aspects of the world, including work, education, and travel. In my opinion, digital technology is very important in modern tourism because it makes everything easier and more convenient for people. Nowadays, many tourists use their phones and the internet when they travel, and businesses also need technology to improve their services. I think digital technology will become even more important in the future. Although technology has many benefits, good communication and personal service are also necessary. Overall, digital technology makes tourism and hospitality better for both tourists and businesses.

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SUSTAINABILITY IN TOURISM: BALANCING GROWTH, ENVIRONMENT AND COMMUNITY

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Abstract. Tourism is one of the world's biggest economic sectors and the sector's growth puts a strain on the natural resources, local communities and global climate. In this paper, the three pillars of sustainable tourism: environmental, economic, and socio-cultural, are discussed and the most prominent negative effects of mass tourism such as greenhouse gas emissions, resources depletion, and overtourism are analyzed. It then looks at practical solutions including carbon

management, ecotourism, visitor management and community based tourism, with examples from around the world. It suggests that sustainability in tourism is not a market segment in its own right, but an essential precondition for the industry's own survival, and that it needs joint efforts by governments, businesses, as well as local communities and tourists.

Keywords: sustainable tourism, ecotourism, overtourism, carbon footprint, community-based tourism, responsible travel.

Introduction

In the last seventy years, tourism has evolved from the privileged few to a mass phenomenon on a global scale. Today, international tourist numbers have increased from approximately 25 million in 1950 to nearly 1.5 billion in 2019, and, following the significant decline triggered by the COVID-19 pandemic, have now almost completely rebounded. Tourism accounted for 10 % of global GDP and 10 % of global jobs on average before the pandemic [7]. In developing nations, such as Central Asian, tourism is considered as an important economic diversification tool, a source of foreign currency and development of the region.

This growth comes at a cost, though. Tourism is responsible for a high level of energy, water and land use in aviation, hotels and cruise ships. Tension between residents and guests, high housing prices and overcrowding have been a problem in popular tourist destinations like Venice, Barcelona, Dubrovnik and Bali. However, tourism itself relies on the same resources that it puts under threat: clean beaches, healthy ecosystems, a stable climate and authentic local cultures.

Thus, the main concern of this paper is how tourism can sustain its economic advantages without destroying the environmental and social bases of tourism. The thesis presented here is that sustainable tourism is not a «green» add-on; it is the only solution for sustainable development in the long term and that it can be realized through an integrated and balanced development approach that is rooted in the preservation of the environment as well as in an equitable economic distribution and respect of the local communities.

The paper is organized as follows. Section 1 introduces the concept of sustainable tourism and the three pillars of sustainable tourism. In section 2, the environmental impacts are analysed, highlighting the development of tourist flows. The economic and socio-cultural aspects are discussed in section 3, such as overtourism. Section 4 outlines strategies and good practices and Section 5 summarises the key challenges before the conclusion.

1 The Concept of Sustainable Tourism

The concept of sustainable tourism emerged from sustainable development which is described as development that does not harm the ability of future generations to develop their needs in the Brundtland Report [1]. The World Tourism Organization (UNWTO, now UN Tourism) does the same for the tourism sector, and defines sustainable tourism as tourism that "fully respects the needs of visitors, the tourism industry, the environment and host communities while ensuring the preservation of their contribution for the benefit of future generations" [3].

There are three interwoven pillars that lie behind this definition:

1) environmental sustainability - making optimal use of natural resources, maintaining essential ecological processes and helping to conserve biodiversity. This encompasses low energy and water use, waste management and conservation of vulnerable ecosystems like coral reefs, mountains and deserts, etc.;

2) economic sustainability – realistically sustainable economic operations that delivers fairly distributed benefits such as stable employment, income opportunities and social services to host communities. Tourism should boost the local economy, and not transfer money to foreign operators;

3) socio-cultural sustainability – respecting cultural authenticity of the host communities, conserving their built and living heritage and traditional values, contributing to intercultural understanding and tolerance.

The pillars are not independent of each other. Sustainability is not only energy efficiency, but also the use of local human resources and the protection of nature. Sustainability can only be achieved when all three are in balance. The idea is also closely related to the United Nations Sustainable Development Goals (SDGs): Tourism is explicitly stated in the goal 8 (decent work and economic growth), 12 (responsible consumption and production) and 14 (life below water).

2 Environmental Impacts of Tourism Growth

The environmental pressure of tourism is directly linked to the scale of tourist flows. As Figure 1 shows, international arrivals grew almost 60-fold between 1950 and 2019. The pandemic caused a fall of more than 70 % in 2020, but the recovery was fast, and by 2024 arrivals had almost returned to their pre-crisis peak [4]. Forecasts suggest further growth, driven mainly by the expanding middle class in Asia.

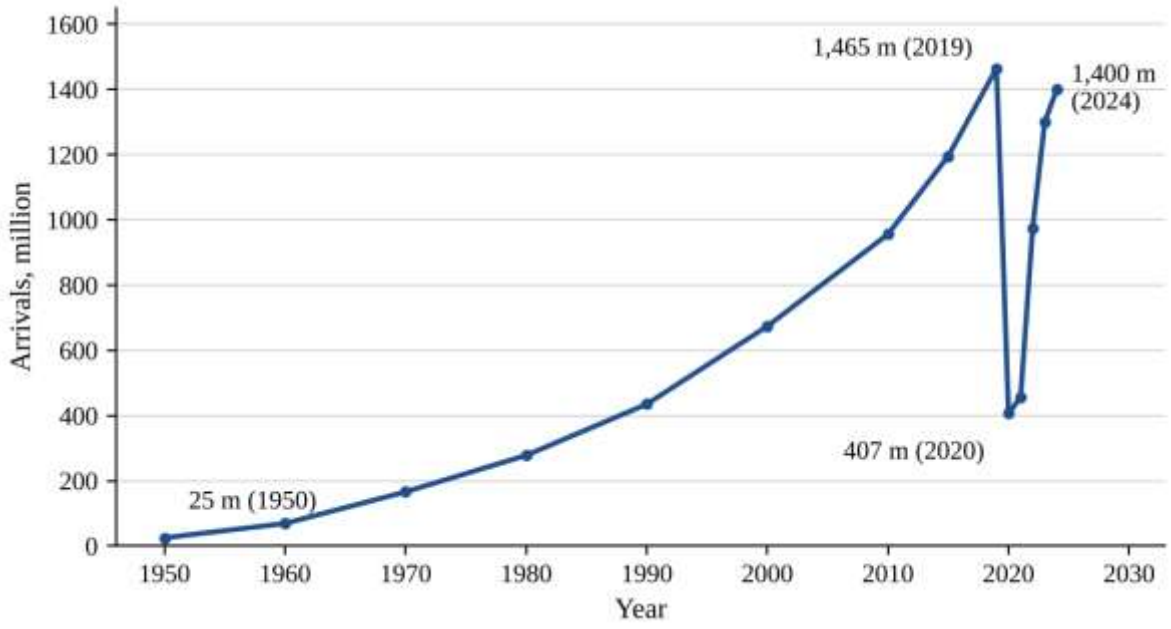


Figure 1 – International tourist arrivals, 1950–2024, million (approximate, according to UN Tourism data [4])

Climate change. Greenhouse gas (GHG) emissions is the most significant environmental consequence of tourism. The contribution of tourism to greenhouse gas emissions has been estimated at approximately 8 % of global emissions when

the complete supply chain (transports, accommodation, food and shopping) is taken into account [2]. Transport, and in particular aviation, contributes the most. The emissions from one long-haul round-trip flight per passenger are in excess of one tonne, which equals to several months of the average citizen's emissions in many countries.

Resource consumption. People who travel more water and energy than locals do. Hotel swimming pools, golf courses, and laundry all vie for limited water resources in dry Mediterranean islands or desert resorts with agriculture and households. Another issue is waste: popular beaches and mountain trails, including base camps on Everest, are littered with plastic and waste management is poor, particularly during peak season.

Biodiversity and ecosystems. Coastal and natural landscapes are altered by the development of hotels, roads and airports. Snorkelling, anchoring, chemicals in sun cream and the disturbance of wildlife are adverse impacts on coral reefs and wildlife caused by large numbers of visitors. Ironically, the loss of these ecosystems diminishes the appeal of destinations and hence long-term tourism profit. Tourism is also particularly vulnerable to climate change: island resorts are at risk from rising sea levels and shorter winters mean fewer opportunities for ski resorts in the Alps [8].

3 Economic and Socio-Cultural Dimensions

Economics and leakage. Tourism provides employment with a wide variety of skills, such as in the hotel industry, guiding, farming, and providing crafts and other products to the tourism industry. Tourism plays a major role in the economies of small island states, contributing over 20 % of GDP. But an important proportion of tourist expenditure may leak out of the tourist destination. If international hotel chains, foreign tour operators, and imported goods are the prevalent, then a significant proportion of the revenues generated is remitted to the tourists' own countries. UNEP studies have determined that in some developing destinations, leakage is as high as 40-80 % of tourism income [3]. Sustainable tourism therefore serves the priorities of local ownership, local supply chain and fair wages, for the benefit to stay in the host region.

Employment opportunities are also often low-paid, precarious and seasonal in the tourism industry. Economic sustainability will only be possible if it is sustained throughout the year, if investments are made in training and decent working conditions and if tourism is associated with SDG 8.

Overtourism. A new term was introduced into public discourse in the 2010s, overtourism: a condition that occurs when a tourist destination is visited by too many tourists for it to be able to receive them without impacting on the quality of life of its inhabitants, or the quality of the visit itself [5]. The problem became Venetian, with some 50,000 permanent residents living in the historic centre and tens of thousands of day visitors on peak days. In 2024, the city implemented an entry charge for day-tripers on busy days. Barcelona, Amsterdam and Dubrovnik have capped the number of new hotels, cut cruise ship numbers or regulated short-term rental sites like Airbnb.

The negative social impacts are higher real estate prices as houses turn into vacation homes, the banishment of locals from traditional neighbourhoods, overcrowding on public transport and the loss of local shops for souvenirs. How many times has one had to find out what is the limit of tolerance in Barcelona, Mallorca and the Canary Islands in 2024.

Cultural impacts. Tourism can support the preservation of heritage by generating income for its restoration and rejuvenating interest in traditional crafts, music and cuisine. It can also be the commercialization of culture, in which rituals and traditions become watered down or acted out for visitors, and lose their original meaning. Sustainable tourism aims to engage local communities in the development of their culture and heritage, so that communities can be a part of their own heritage rather than its consumers.

4 Strategies and Good Practices

The challenges described above are serious, but many destinations and companies have already developed effective responses. Table 1 summarises the main strategies for sustainable tourism, the pillar each mainly addresses and examples of implementation.

Table 1 – Key strategies for sustainable tourism and examples of implementation

Strategy	Main pillar	Key measures	Example
Decarbonisation of transport and accommodation	Environmental	Sustainable aviation fuel, rail instead of short-haul flights, renewable energy in hotels	France banned domestic flights where a train alternative under 2.5 hours exists (2023)
Ecotourism and nature conservation	Environmental	Park entrance fees fund protection; strict limits on visitor numbers	Costa Rica: about a quarter of territory protected; ecotourism a major source of income
Visitor and flow management	Socio-cultural	Entry fees, timed tickets, caps on cruise ships, promotion of off-season travel	Venice day-tripper access fee (2024); Machu Picchu daily visitor quotas
Community-based tourism	Economic	Locally owned guesthouses, local guides, local food supply chains	Homestays in Nepal and Kyrgyzstan run by village families
Certification and standards	All three	Eco-labels with independent audits based on GSTC criteria	Green Key, EarthCheck, GSTC-recognised standards [6]
High-value, low-volume model	Economic	Daily sustainable development fee per visitor	Bhutan: Sustainable Development Fee of USD 100 per night (since 2023)
Responsible traveller behaviour	All three	Longer stays, fewer flights, respect for local customs, carbon offsetting	Growth of «slow travel» and train-based holidays in Europe

There are a few lessons to be learned from these examples. Pricing tools work; if visitors pay for the “true cost” of their impact – as in Bhutan or Venice – then there is money available for conservation and infrastructure and pressure on the

destination is reduced. Secondly, the involvement of local people is a must. The results of the community-based tourism in the mountain of Nepal and Kyrgyzstan reveal that the village people's income remains in the village when they run and manage the offer of tourism themselves and their culture is presented to the visitors on their own terms.

Third, the use of technology and data is growing as a means of supporting sustainable management. Crowding monitoring systems in smart cities like Amsterdam and Barcelona can be used in real-time to guide visitors away from overcrowded areas and towards those with fewer people. The flow is distributed by the day through Digital booking with time slots. Finally, certification can give travellers some assurance of the businesses that are truly responsible, but again this must be verified independently and the credibility of certification is subject to the threat of "greenwashing" – the marketing of products as being more environmentally friendly than they actually are.

These strategies are suitable to emerging destinations like Uzbekistan, where the development of the international tourist market has been accelerated in the historic centres of Samarkand, Bukhara and Khiva, giving them the chance to plan for sustainability from the beginning, as well as to develop rural and eco-tourism in mountain regions, and to ensure that local residents benefit from the growth in visitor numbers.

5 Challenges of the Transition

Although there has been increasing awareness, there are some challenges to transitioning to tourism that is sustainable. The biggest is between short-term profit and long-term sustainability – governments and businesses tend to focus on more easily-measured growth in visitor numbers over quality and impact. The second one is aviation, which is still hard to decarbonise, with limited production volumes and high prices of SAFs. Thirdly, there is a disconnect between attitudes and behaviour: despite many travellers stating they would like to travel in a more sustainable way, price and convenience are still the main driver in their decision making. Last but not least, greenwashing erodes consumer trust in ecolabels and makes it harder for consumers to identify truly responsible products.

Conclusion

This paper has contended that sustainability is not something imposed on tourism from the outside but is a condition enabling the survival of tourism. The industry relies on beautiful scenery, a predictable climate, living cultures and friendly host communities—all elements that are being lost with unchecked mass tourism. These tools were already identified as effective and are not new: carbon reduction in transport and accommodation, ecotourism, visitor management, community participation, pricing mechanisms and credible certification.

The critical challenge for the next ten years is to use these tools on a regular and wide scale basis. Governments: incorporate carrying capacity limits and sustainable indicators into the planning process for tourism; businesses: be honest about their impacts and report them; local communities: have a genuine voice in the decisions for tourism; tourists: travel slower, stay longer and choose responsibly. With these players collaborating, tourism can continue to be a source of income and

cultural diversity for generations to come, not a place where one's favorite people or places are at risk.

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O‘ZBEKISTONNING TURIZM IMKONIYATLARI

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Kalit so‘zlar: turizm, barqaror o‘sish, mintaqalar turizmi, turistik salohiyat, turistik yo‘nalish, bandlik, tarixiy yodgorliklar, sayohat, tarkibiy o‘zgarishlar, diversifikatsiya, kompleks rivojlanish.

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