

The Need for Sustainable Tourism in an Era of Global Climate Change

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The Need for Sustainable Tourism in an Era of Global Climate Change: Pathway to a Greener Future

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Chapter 1

Navigating Towards a Greener Tomorrow: The Imperative of Sustainable Tourism in the Era of Global Climate Change

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Abstract

As the world advances towards a sustainable and more environmentally friendly future, the need for protecting the environment becomes more and more apparent in every area. The tourist business has seen remarkable expansion, making a considerable contribution to the worldwide Gross Domestic Product (GDP). Nevertheless, this expansion has coincided with an increase in the release of greenhouse gases and the deterioration of natural ecosystems. In order to tackle these difficulties, there is an increasing acknowledgment of the need for a fundamental change in approach towards implementing sustainable tourism practices. This chapter analyses the present state of tourism and its contribution to the increase of carbon footprints. It also investigates possible remedies, including the implementation of environmentally friendly hotels, the use of cleaner energy sources, and the adoption of ideas from the circular economy. In addition, by using bibliometric analysis, the chapter offers valuable information on current research patterns in sustainable tourism, such as prominent authors, nations, keywords, and topics. This chapter provides a comprehensive analysis of the current state and future potential of sustainable tourism. It is a vital reference for policymakers, academics, and industry professionals, offering guidance on how to develop a more sustainable and resilient tourist business.

Keywords: Sustainable tourism; climate change; green development; overtourism; bibliometric analysis

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1. Introduction

Rapid economic growth, industrialisation, trade openness, and unscrupulous use of energy have led to a disastrous change in the climate that has manifested into the destruction of natural flora and fauna along with an exponential rise in health crises leading to environmental emergency (Balsalobre-Lorente et al., 2023). Economies in an urge to enhance their economic wealth promote their economies as tourist destinations that no doubt add to the wealth kitty but at the same time, it calls for increased energy usage and adds the burden on natural resources (Fauzel et al., n.d.). The rising trend of travel and tourism has in fact led to the issue of over-tourism which has been disastrous to many places in India as well as abroad (Khan et al., 2020). The need to address the issue of climate change has led to the initiation of various reforms at the country as well as global level amongst which the most popular is the Sustainable Development Goals by the United Nations (Ratten, 2023). A brief overview of the contribution of the tourism sector to the global GDP is highlighted in Fig. 1.1 which provides how one-tenth of the total GDP comes from Tourism receipts, it thus being an important contributor to employment, wealth generation, and hence increasing the living standard of the various economies. Tourism sector is an important constituent that helps in determining the economic status of a country as it not only adds to the wealth of an economy but also builds a good image at the macro level (Boháč & Drápela, 2022; Kryczka, 2019). The positive effects of tourism are however not without the associated drawbacks (Weaver, 2011; Merli et al., 2019). The rapid expansion of tourism and its impact on climate change along with the steps undertaken to mitigate its impact is the agenda of the present chapter. This chapter also highlights the academic contribution in the domain of sustainable tourism using research papers from the SCOPUS database and analysing the same using bibliometric analysis based on its performance and science mapping. The scientific literature thus would identify the existing status of sustainable tourism along with its future scope. This chapter is divided into subsections wherein Section 2 discusses the present situation of tourism at the global level along with highlighting its role in the changing climatic condition, its contribution towards carbon emission and the carbon footprints associated with various tourism activities namely accommodation, infrastructure, transportation and energy usage. Section 3 draws upon successful tourism case studies that have helped in reducing carbon emissions and hence have contributed towards a sustainable future. Section 4 discusses about challenges that the tourism industry faces in mitigating its environmental impact. Section 5 highlights the academic trend in the domain of sustainable finance and Section 6 provides the future scope and conclusion of the chapter.

2. Current Scenario of Global Tourism and Carbon Footprints

Tourism has led to the generation of economic wealth by contributing hugely to employment generation, community development and an increase in the GDP (León-Gómez et al., 2021). The pros, however, are not free of the associated cost

which is the rising pollution, unscrupulous use of energy resources, destruction of natural flora and fauna and adding substantially to the carbon footprints (sustainabletravel.org). Fig. 1.1 provides the contribution of the tourism sector towards global GDP over the last few years.

Emission from the tourism sector comes from multiple sources, be it traveling, lodging, construction or the food and beverage all contribute significantly to the carbon footprints (Lenzen et al., 2018). Various studies have highlighted the role of tourism-related transportation in contributing significantly to increased greenhouse gas emissions (Safaa et al., 2023) as depicted in Fig. 1.2, wherein the expected emissions are bound to cross the 1990 million metric tons mark by the end of 2030. The data is highly contradictory to the sustainable development goals that are expected to be achieved by 2030. Rising carbon emissions through travel and tourism will make it all the more difficult for the countries to attain the target of SDGs. The problem is all the more tricky to handle as tourism cannot be curtailed it being a major contributor of economic wealth. What is required is varied alternatives like making a shift towards greener alternatives be its green hotels, green energy use, paving the concept of circular economy and most importantly educating and spreading awareness about its necessity.

To ensure that the carbon emission related to tourism is reduced it is also suggested that tourists should choose places that are closer to their homes and make more use of public transportation. Additionally, governments could give incentives to tourist providers in order to encourage them to improve their energy efficiency. However, neither strategy has been very effective up to this point. Rising tourism and associated greenhouse gas emissions thus call for sustainable measures at the behest of Government, policymakers, academicians and all

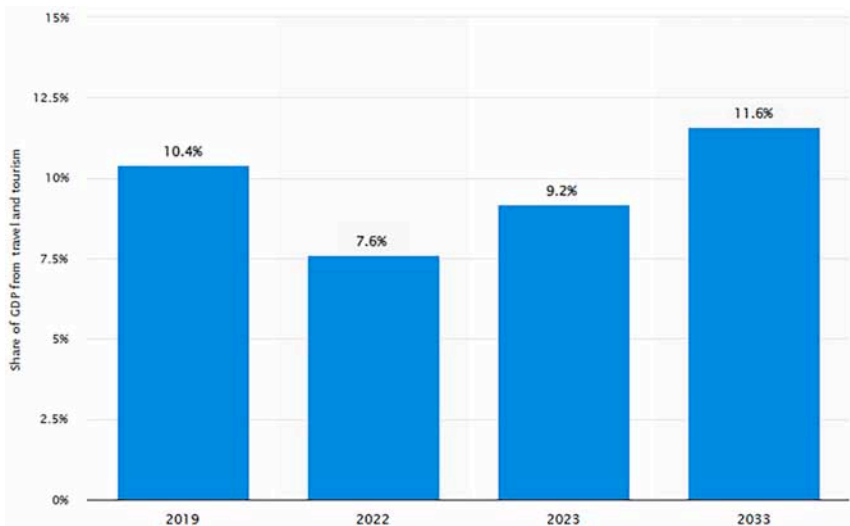


Fig. 1.1. Share of Travel and Tourism’s Total Contribution to GDP Worldwide in 2019 and 2022, with a Forecast for 2023 and 2033. *Source:* Statista.com.

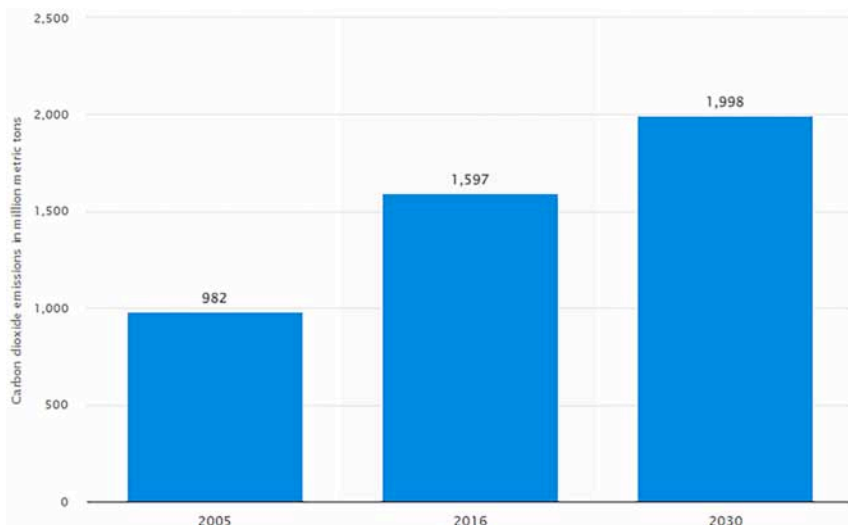


Fig. 1.2. Carbon Dioxide Emissions from Tourism-related Transport Worldwide in 2005 and 2016, with a Forecast for 2030 (in Million Metric Tons of Carbon Dioxide). *Source:* Statista.

others associated to ensure that there is neither compromise of travelling opportunities nor destruction of the environment.

3. Successful Tourism Case Studies and its Contribution to a Better Tomorrow

Increased burden on the land and resources because of an exponential rise in global tourism has brought significant changes to traditional tourism practices. A few contemporary mechanisms that have been introduced to ensure that tourism only promotes positive externality are provided in this section.

3.1. Green Hotels

Rising tourism across geographical boundaries calls for increased demand of accommodation and related infrastructure. It produces a dual impact wherein on one side it helps in community development, employment generation and wealth creation, and at the same time, it leads to increased carbon footprints and unscrupulous use of energy that leads to the destruction of the natural eco-system (Merli et al., 2019). The problem of over-tourism and its associated negative externalities thereby led to the origin of the concept of Green Hotels wherein the hotels make use of varied green practices to ensure that the negative environmental impact is mitigated. It gave rise to rising consumer awareness along with rating of hotels based on their use of green practices. It is a perfect example of how technology can produce results that are pro-environment (Yadav et al., 2019).

3.2. Community-based Tourism

Tourism as discussed earlier has the potential to generate income and other externalities for its stakeholders. A contemporary addition to the tourism industry has been the community-based tourism that helps in developing the local communities (Lee & Jan, 2019). Places like Malaysia, New Zealand, Vietnam, and Philippines have seen success because of community-based tourism. By showcasing the unique culture, traditions and natural landscapes of a destination, CBT initiatives contribute to diversifying tourism offerings. This reduces dependency on mass tourism and helps spread the benefits of tourism across different regions and communities.

3.3. Responsible Eco Tourism

Responsible tourism plays a crucial role in fostering sustainable tourism by advocating for methods that reduce harmful effects on the environment, culture, and communities, while maximising the advantages for all parties involved. Responsible tourism, with its focus on environmental protection, effectively mitigates pollution, preserves natural resources, and safeguards biodiversity, thereby guaranteeing the sustainability of destinations in the long run. Furthermore, it promotes cultural reverence and conservation by motivating travellers to interact with local people in a considerate way, safeguarding cultural identities and history. Responsible tourism places high importance on ensuring that economic gains are distributed fairly, strengthening local communities by providing job opportunities and supporting small businesses. Responsible tourism employs education and awareness campaigns to educate both travellers and local populations about sustainable practices. It also promotes a feeling of responsibility towards taking care of the destinations. By adhering to the principles of responsible tourism, stakeholders together strive to develop tourist destinations that are commercially viable, socially inclusive, and ecologically sustainable.

The above points highlight how green hotels, community-led tourism, and responsible tourism have promoted sustainable tourism across various places. Other than these on a general front educating the masses and spreading awareness about the practice of following sustainable tourism practice is going to go a long way in producing significantly positive results for the environment and the global economy as a whole (Sezerel & Karagoz, 2023).

4. Bibliometric Analysis of Sustainable Tourism

Sustainable tourism has gained prominence in policymaking, research, and popular awareness throughout the years, as shown by a thorough examination of previous literature in the field. The modern Bibliometric analysis, described in this portion of the chapter, offers a systematic and comprehensive overview of all the research conducted throughout the years using a scientific method (Pahlevan Sharif et al., 2019). For extraction of the studies related to sustainable tourism,

SCOPUS was used and the following string and inclusion and exclusion criteria were applied to extract the final list for the bibliometric analysis:

TITLE-ABS-KEY (“sustainab Tourism”) OR (ecotourism)) AND PUBYEAR > 1999 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA, “ENVI”) OR LIMIT-TO (SUBJAREA, “BUSI”) OR LIMIT-TO (SUBJAREA, “ECON”)) AND (LIMIT-TO (DOCTYPE, “ar”)) AND (LIMIT-TO (LANGUAGE, “English”)) AND (LIMIT-TO (PUBSTAGE, “final”)) AND (LIMIT-TO (EXACTKEYWORD, “Ecotourism”) OR LIMIT-TO (EXACTKEYWORD, “Sustainable Tourism”) OR LIMIT-TO (EXACTKEYWORD, “Tourism Development”))*

A total of 6,612 documents were examined using Biblioshiny by Bibliometrix-R, based on the specified search criteria. The preliminary examination focuses on the expansion of research in the domain of sustainable tourism. Fig. 1.3 illustrates the increasing interest in this field, which gained momentum around the year 2000. Subsequently, there was a significant surge in studies around 2008 and again in 2014. By the end of 2019, the number of studies reached a peak of approximately 650.

Another important area of analysis in the bibliometrics is the most relevant source which is provided in Fig. 1.4 highlighting the prominence of a few journals like – *Sustainability*, *Journal of Sustainable Tourism*, *Journal of Ecotourism*, *Tourism Management*, and *Current Issues in Tourism*. An understanding of the most relevant sources gives an idea about the places wherein academic work related to sustainable tourism and its implications and future prospects can be looked for. A detail about the sources’ specific parameters related to h_index, and citations along with a total number of publications is provided in Table 1.1.

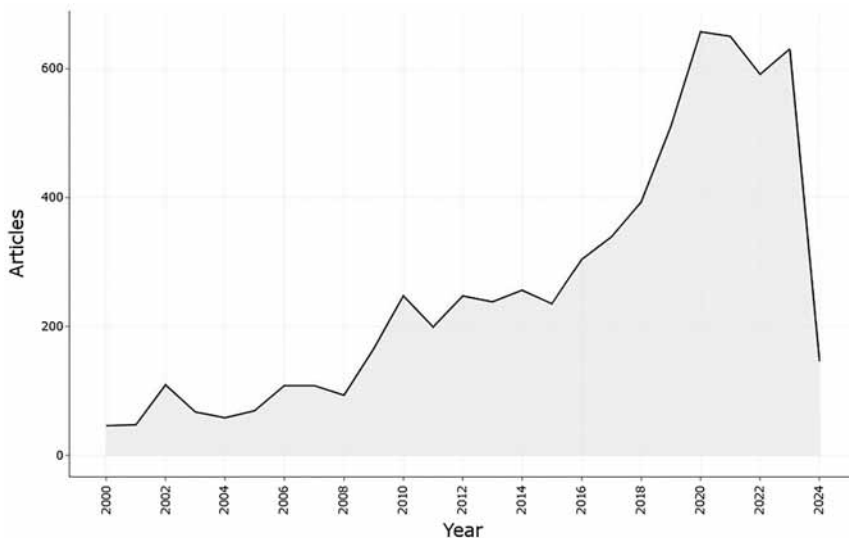


Fig. 1.3. Annual Scientific Production. Source: Scopus.

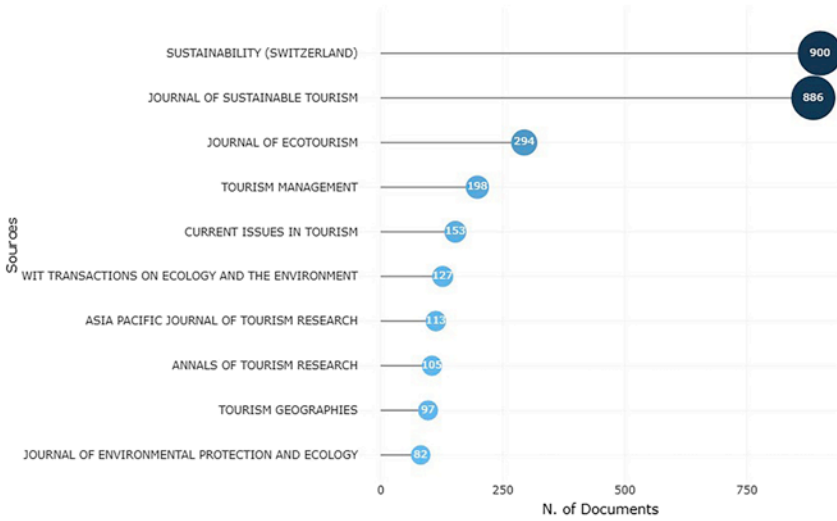


Fig. 1.4. Most Relevant Sources. *Source:* Biblioshiny.

Table 1.1. Source Local Impact.

Element	h_index	TC	NP	PY_start
<i>Journal of Sustainable Tourism</i>	110	50629	886	2000
<i>Tourism Management</i>	88	22151	198	2000
<i>Sustainability (Switzerland)</i>	53	15384	900	2013
<i>Annals of Tourism Research</i>	51	9479	105	2000
<i>Journal of Ecotourism</i>	44	7550	294	2002
<i>Current Issues in Tourism</i>	43	6773	153	2001
<i>Tourism Geographies</i>	38	5092	97	2000
<i>Journal of Travel Research</i>	35	3957	63	2000
<i>Biological Conservation</i>	32	3242	47	2000
<i>Asia Pacific Journal of Tourism Research</i>	30	2709	113	2003

Source: Biblioshiny.

A brief about the most relevant authors is provided in Fig. 1.5 which highlights the most significant contribution in the area of sustainable tourism based on the total number of publications. The knowledge of important authors in the area is crucial to identify as it can help in policy formulation and sustainable solutions to an emergent issue.

An analysis of countries involved in sustainable tourism reveals that the primary contributors in this sector are developed nations such as Australia, the

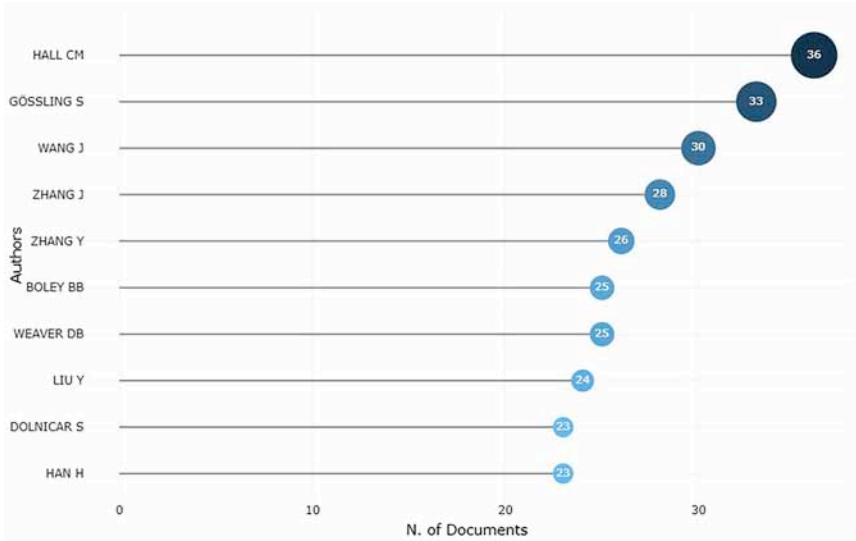


Fig. 1.5. Most Relevant Authors. *Source:* Biblioshiny.

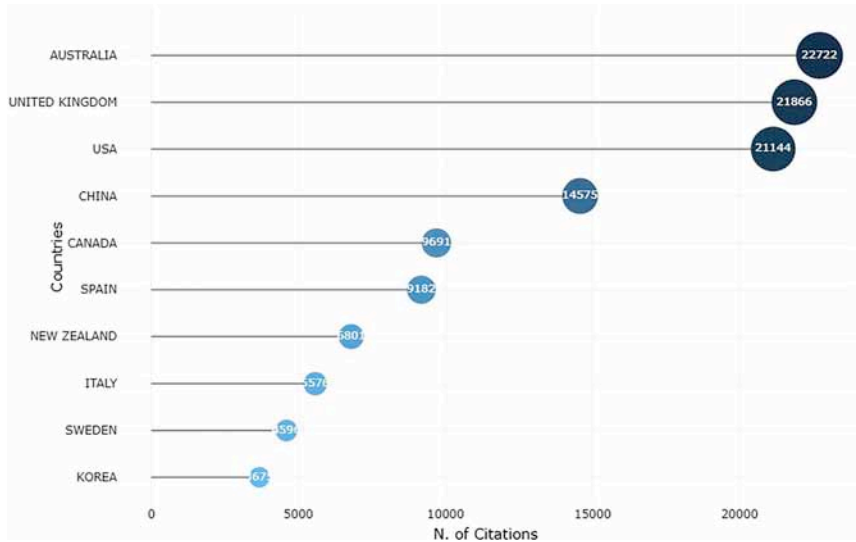


Fig. 1.6. Most Cited Countries. *Source:* Biblioshiny.

United States, and the United Kingdom. Following closely behind are the growing countries of China, Canada, Spain, and others. The rising interest of different countries in the domain of sustainable tourism highlights how the situation is prevalent across nations. The countries producing most work in the area of sustainable tourism are presented in Figs. 1.6 and 1.7 showing how a majority of the countries are involved in the research as the issue is increasingly recognised as