



A STUDY ON SUSTAINABLE INITIATIVES IN TAMIL NADU TOURISM - AN OVERVIEW

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ABSTRACT: Green tourism is a form of tourism that seeks to mitigate the environmental and social impacts of travel. Green tourists select destinations and activities that prioritize sustainability to enjoy and responsibly travel. This includes principles like reducing energy consumption, minimizing waste, and making an eco-friendly environment. Ecotourism ventures are environmentally sensitive initiatives, which also aim to ensure that members of local communities have a high degree of control over the activities taking place, and a significant proportion of the benefits accrue to them. A community-based approach to Ecotourism recognizes the need to promote both the quality of life of people and the conservation of resources. The changing demands of tourists for 'natural' and 'exotic' environments have created new tourism products in developing countries. This study tries to understand the impact of technology implementation in Tamil Nadu tourism. The tourism industry, the country's third-largest economic contributor after mining and agriculture, has been hit hard by the pandemic. The Government of Tamil Nadu has implemented various programs aimed at improving and developing the tourism sector, which offers huge opportunities. The Tamil Nadu Tourism Policy has been formulated to promote Tamil Nadu as a suitable tourist destination throughout the year. This policy is based on research and extensive research to ensure a solid foundation and a progressive approach that meets the changing needs and needs of the times. It was developed with the participation of tourism experts, stakeholders and tourism experts working on various tourism industry platforms. This information can guide policymakers, supply chain, and environmentalists in developing strategies to promote green tourism in Tamil Nadu.

KEYWORDS: Green tourism, technology adoption, eco-tourism, eco-friendly environment, sustainability

INTRODUCTION

Tourism, a strong force for boosting the economy and promoting cultural exchange, as it adapts to the urgent demand for sustainable practices. Tamil Nadu is well-known for its rich history, varied geography, and vibrant traditions. The state's venture into eco-friendly tourism provides an interesting case study at the intersection of environmental awareness and the travel industry. As the world continues to focus on sustainable living, the tourism industry is under growing pressure to minimize its impact on the environment. Tamil Nadu has shown notable leadership in promoting responsible tourism as a response to this. The purpose of this study is to evaluate the wide-ranging effects of the state's efforts to balance tourism with environmental conservation. In this study, we investigate the developing story of Green Tourism in the beautiful landscapes of Tamil Nadu.

In recent years, there has been a significant move towards more sustainable and eco-friendly practices in the global travel industry. With the world facing the impacts of climate change and environmental destruction, the tourism industry has become a crucial actor in championing sustainable and eco-friendly initiatives. The shift in paradigm is particularly evident in areas such as Tamil Nadu, where the combination of a vibrant cultural heritage, varied ecosystems, and a flourishing tourism industry calls for a greater emphasis on sustainability. This article explores the growing green tourism industry in Tamil Nadu, focusing on the creative tactics and programs designed to promote both tourism and environmental preservation.

The incorporation of technology into the tourism industry has transformed how travellers plan, experience, and share their journeys. Technology is critical in enhancing sustainability and conservation efforts in the context of green tourism. Tourists can find information about eco-friendly accommodations, transportation options, and local attractions on online platforms. Mobile applications help tourists navigate, provide real-time environmental updates, and encourage responsible behaviour. Green tourism, a form of responsible travel that minimizes environmental impact and promotes conservation, is gaining popularity among travellers all over the world. Technology has emerged as a potent tool for promoting and enhancing green tourism practices, with numerous advantages for both tourists and the environment. The purpose of the study is to research the multifaceted impact of technology on green tourism in Tamil Nadu, India. In six

out of the last seven years, Tamil Nadu ranked 1st in domestic tourist visits, continuing its dominance in the domestic tourism market. The Ministry of Tourism released the Indian Tourism Statistics Report 2022, which shows that foreign exchange earnings (FEE) from tourism increased by 26.4% to US\$ 8.797 billion from US\$ 6.959 billion in 2020. The World Travel and Tourism Council (WTTC) estimates that in 2021, the tourism sector in India generated USD 178 billion in revenue, or 5.8% of the nation's GDP. Additionally, 32 million people were employed in the sector, making up 7% of all jobs in India. In addition, domestic visitors accounted for 94% of the expenditure. With more than 115 million visitors, Tamil Nadu accounted for a sizeable 17.02% of all domestic tourist visits in 2021. The tourism industry has been successful in accelerating massive deforestation activities. Along with this, the construction of roads and buildings, as well as the movement of heavy vehicles, is increasing the degenerative pressure on the already weakened mountains. With all of these different human activities, the mountain world is now in a perilous ecological state, necessitating immediate conservation and management plans to promote ecotourism.

OBJECTIVES

- To understand the impact of technology in development of Tamil Nadu
- To know the steps taken to maintain eco-friendly environment for sustainable development

REVIEW OF LITERATURE

Suraj Kumar Mallick, Somnath Rudra and Riya Samanta, 2020, stated in their Sustainable ecotourism development using SWOT and QSPM approach: study on Rameswaram, Tamil Nadu that travellers, residents, urban planners, tourism departments, and legislators must all communicate the full scope of the problems using strengths and opportunities. They also require sufficient, strategically based planning to create a sustainable environment for the growth of tourism and the creation of jobs throughout the study area.

G. Sathis Kumar and S. Ramaswamy, 2010, stated that the travel and tourism sector is moving quickly to offer eco-tourism goods and services to its audience, or travellers, also both travellers and tourism service providers now understand the concept of eco-tourism sustainable development in their paper.

Lavanya and S. Jeyakumar, 2019, have mentioned that the notion of green tourism holds great appeal for tourism businesses and operators, as there is growing political pressure to enhance environmental performance through the implementation of practical and efficient environmental management strategies.

Nimi Markose, Bindu Vazhakkatte Tazhathethil and Babu George, 2022, expressed that responsible tourism and the Kerala RT mission in Wayanad, India, focusing on local community participation and tourism development. It suggests integrating both responsible and green tourism for long-term development and destination sustainability.

Usha A and Dr.M. Edwin Gnanadhas, 2014, in paper named A Study on Sustainable Tourism Development in Kanyakumari District and stated that Kanyakumari, a 'Cross Cultural Paradise' with rich heritage, sculptures, beaches, mountains, and cuisine, is attracting both domestic and foreign tourists due to its natural beauty, climate, and environment. Government and private sector must work together to develop this attractive tourism destination.

Abhishek Rustagi and Nagaraju Kaja, 2022, studied that the Rameswaram to Dhanush Kodi stretch necessitates immediate action from governments and civil society organizations for ecological protection, utilizing eco-tourism, local government involvement, and sustainable growth initiatives.

Impact of technology in tourism

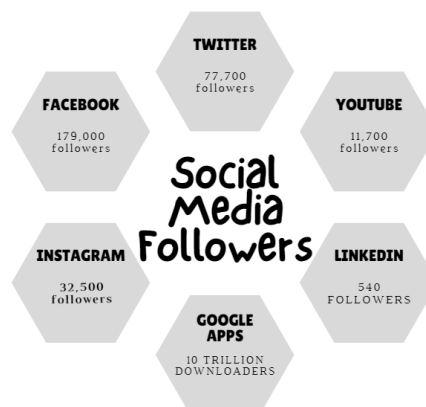
Technology is playing an increasingly important role in promoting green tourism. Here are some of the key ways in which technology is having a positive impact:

- **Enhancing information and education:** Technology is providing tourists with better access to information about sustainable travel options. For instance, Platforms like Booking.com and Airbnb prominently display eco-friendly accommodations, highlighting features like solar panels, water conservation efforts, and locally sourced products. This raises awareness among travelers and encourages them to choose sustainable options.
- **Promoting sustainable travel practices:** Technology is also being used to promote sustainable travel practices. VR experiences allow potential tourists to explore destinations virtually, reducing the need for physical travel and associated carbon emissions. For example, there are websites like Tamil Nadu Tourism with UNESCO provides the World Heritage sites virtually and 360-degree view with English voice over about the history.
- **Reducing the environmental impact of tourism:** Technology is also being used to reduce the environmental impact of tourism. For example, some airlines are using technology to optimize flight paths and reduce fuel consumption. Additionally, some hotels are using technology to reduce their water and energy consumption.
- **Big data** is being used to track the environmental impact of tourism. This data can be used to identify areas where improvements can be made, such as by reducing energy consumption or waste generation. For instance, to understand the travel patterns of eco-conscious tourists visiting the state for the Tamil Nadu Tourism Department (TTD), the big data can help them to tailor their marketing strategies, develop sustainable tourism initiatives and optimize resource allocation.

Overall, technology is having a positive impact on green tourism. By providing tourists with better information and education, promoting sustainable travel practices, and reducing the environmental impact of tourism, technology is helping to make tourism more sustainable.

Technology has played a significant role in promoting green tourism in Tamil Nadu, India's fourth-largest state. The state is home to a wealth of natural beauty, including pristine beaches, lush forests, and ancient monuments, making it an ideal destination for eco-tourists.

1. **Online Bookings and Information:** Technology has made it easier for tourists to plan and book sustainable tourism experiences in Tamil Nadu. Online booking platforms allow tourists to compare and book eco-friendly accommodations, activities, and tours, ensuring that their travel choices align with their environmental values.
2. **Smart Tourism Infrastructure:** Smart tourism infrastructure, such as digital signage and interactive maps, is being deployed in Tamil Nadu's tourist destinations to provide tourists with information about sustainable practices and responsible tourism guidelines. This helps raise awareness and encourages visitors to adopt eco-friendly habits during their stay.
3. **Mobile Apps and Guides:** Mobile apps and digital guides are being developed to empower tourists to explore Tamil Nadu's natural attractions while minimizing their environmental impact. These tools provide real-time information about trails, wildlife sightings, and weather conditions, helping tourists make informed choices about their itineraries.



4. **Data-Driven Conservation:** Technology is being used to collect and analyse data on tourism patterns and environmental impact in Tamil Nadu. This data is essential for informing conservation efforts, identifying areas of concern, and developing targeted initiatives to protect the state's natural resources.
5. **Sustainable Transportation:** Technology is promoting the use of eco-friendly transportation options for tourists in Tamil Nadu. This includes online bike rentals, shared electric vehicle schemes, and real-time public transport information that encourages visitors to opt for sustainable modes of travel.

Initiatives by Government of Tamil Nadu in Ecotourism

The Tamil Nadu government released an ecotourism policy in 2017, which envisages a major role for local communities. Community-based Ecotourism was one of the guiding principles on which the development of ecotourism in the state will be based.

The Forest Department is the Nodal Department for implementing the policy and created SEB (State Ecotourism Board) to take policy decisions for promotion and development of ecotourism.

At the District level Ecotourism Management Societies (ETMS) is established to promote, manage and regulate ecotourism sites. ETMC's have been created by the Government of Tamil Nadu, wherein, destinations that have an Eco-tourism as a product are run by the Local Community, through the Joint Forest Planning and Management (JFPM). This involves the formation of Village Forest Committees (VFCs) to formally enter into partnership agreements with the forest department for planning and implementing various forest protection, conservation and development programmes. This is done based on a Management Plan (MP) that the villagers evolve in collaboration with the forest department and various government and non-government agencies after due stakeholder consultations. The Ecotourism policy of the Government of Tamil Nadu, Forest Department, has proposed for measures that will focus on the community participation to enhance not only livelihood options but also management of the ecotourism destinations locally.

Tamil Nadu Forest Department has formulated a project called Tamil Nadu Biodiversity Conservation and Greening Project (TBGP) aided by the Japan International Cooperation Agency (JICA); it also ensures ecologically sustainable development initiatives by promoting community participation in eco development, tribal development and eco tourism.

The coordination and networking with the State Forest Department, Tamil Nadu Tourism Development Corporation and Hindu Religious and Charitable Endowments Department for management, promotion and marketing of ecotourism destination and products are necessary for development of sustainable ecotourism.

Contribution of Ecotourism for sustainable benefits

Builds Community Strength and Unity

The local community is involved in carrying out the day-to-day operations for delivering the services to the guests. Working towards the common goal enhances the community strength and unity.

Community-Based Tourism Products In order to provide a village experience to tourists by guiding them through real life situations in hinterlands and thereby distributing economic benefits of tourism directly to the community, tour packages are developed. These packages are popular among tourists and the state tourism websites are promoting these. The members of the community participating in the package by showing / demonstrating their activities receive fixed amounts from the package – price realized. These packages creates close interaction between the community and the visitors.

The Empowerment of Women Community based tourism plays an important role in empowering local women. It calls for community participation with women's active role in decision-making, benefits sharing, pride in traditional skills; environment care, systemic ownership and sustainable management of the process are among the principal intended outcomes. The Government of India-United Nations Development Program's Rural Tourism Project aims to empower women in tourism.

Strengthening Community Pride

Community based tourism encourages the locals to share the culture of village life that has existed for centuries with tourists from urban areas. From local arts and crafts to recipes, songs and dance, guests experience the vibrancy and joy of rural life. This in turn strengthens the pride among local population for their culture.

Passing on Traditional Skills and Knowledge between Generations

While visiting rural areas, tourists experience local traditions and consume local products respectively. As these destinations become popular, the demand for such traditional products increases. In many cases this has helped in reviving arts and crafts as people pass on their skills and knowledge to their future generations to fulfill the increasing demands for such products. People also start taking pride in their heritage-clothing, food, customs and beliefs, lifestyle, building technologies etc.

Increased Hygiene and Safety Awareness

The Endogenous Tourism Project is a collaborative effort between the Ministry of Tourism (MoT) and United Nations Development Programme (UNDP) initiated in 2003 and being implemented at 36 sites across the country. Infrastructure development in the ETP falls into three broad categories. First those that had direct linkage to tourism (accommodation, restaurants, tourist information / interpretation centres), second those that are geared to overall village development and indirectly benefiting tourism (toilets, pavements, footpaths, street lighting) and third was an aspect of convergence of various schemes for the village so as to provide basic facilities & services and civic amenities in which they lacked. The capacities of community members were built by conducting training on varied issues – awareness, tourism linked skills and livelihood, alternative livelihood and institutional management. (Equation 2008)

Economic Contributions

Tourism has always been a great contributor to the economic growth of the region. In order to determine the success of any project, it is important to assess the distribution of economic wealth amongst its stakeholders. It is important that these gains are regular and reliable.

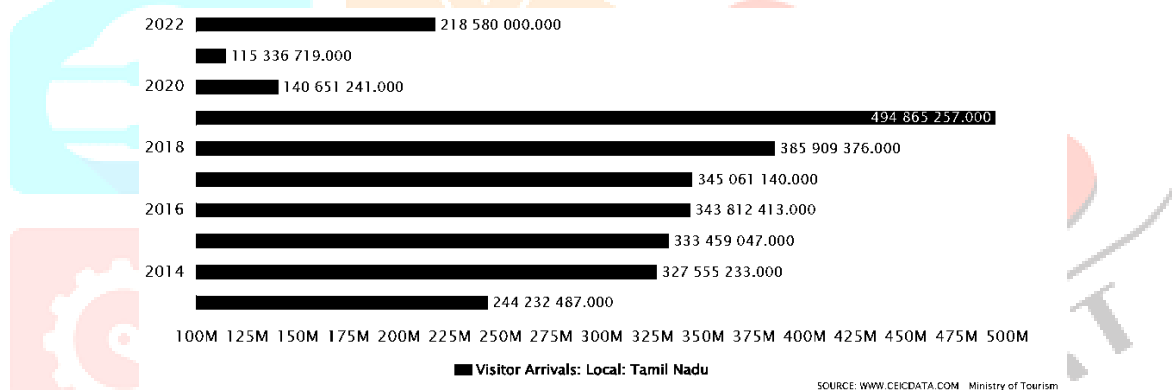


FIGURE showing details about visitors' arrivals in Tamil Nadu 2013-2022

Source: CEICDATA

The above graph shows the number of visitors arriving in Tamil Nadu from 2013 to 2022. According to the data provided by the Ministry of Tourism, the total number of people visiting Tamil Nadu in 2022 is 218,584,800. Visits to Tamil Nadu have been steadily increasing between 2013 and 2019, reaching a peak of 494,865,257 people in 2019. However, due to the pandemic, the number of visitors decreased drastically after this period. Tamil Nadu had to experience a boom in the year 2022. Tamil Nadu data have active status in the CEIC.

Arrivals of NRIs increased by 52.6% in 2021 compared to 2020. In India, the number of foreign visitors arrived increased by 10.6% in 2021 compared to 2020. The monthly breakdown of foreign tourist arrivals and NRI arrivals in India from 2019 to 2021, along with the growth rates.

TABLE SHOWING SHARE IN GDP BY TOURISM INDUSTRY DURING 2017 TO 2021

	2017-18	2018-19	2019-20	2020-21
Share in GDP (in %):	5.02	5.02	5.19	1.06
Direct (in %)	2.61	2.61	2.70	0.55
Indirect (in %)	2.41	2.41	2.49	0.51

Note: The above estimates have been updated using NAS 2022

Source: secondary data

FEEs during the period during 2022 (Provisional estimates) were Rs. 1,34,543 crores with a 106.77% over same period of previous year. FEE during the period 2022 (Provisional estimates) were US\$ 16.926 billion with a growth of 92.41% over same period of previous year. 2002-03, 2009-10 and 2015-16 in the years 2006, 2012 and 2018 following the methodology recommended by United National World Tourism Organization.

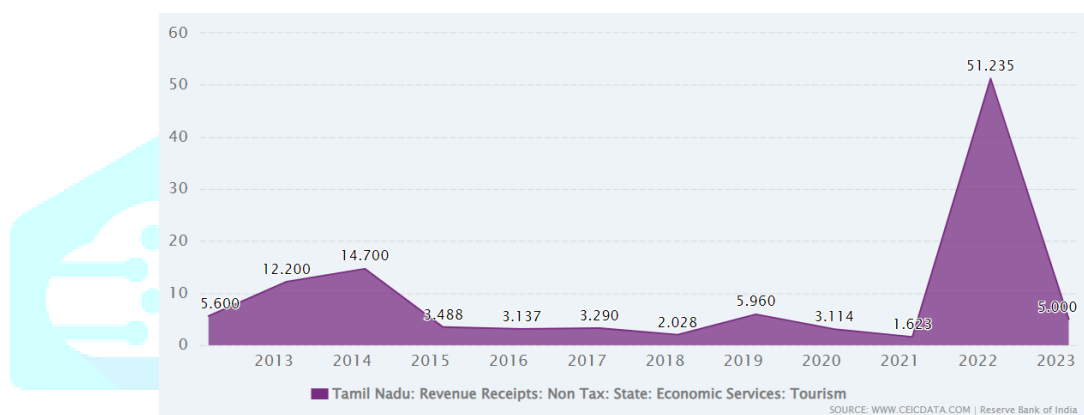


CHART SHOWING REVENUE RECEIPTS FROM TAMILNADU TOURISM

There has been drastic boost in revenue after COVID 19. Tourism data was reported at 5million INR in 2023. This records a decrease from the previous number of 51.235 million INR for 2022. Tourism data is updated yearly, averaging 12.700 million INR from March 1991 to 2023 with 33 observations. The data reached an all-time high of 350.0 million INR in 2006 and a record low of 1.623 million INR in 2021. Tourism data remains active status in CEIC and is reported by Reserve Bank of India. The data is categorized under India Premium Database's Government and Public Finance.

GREEN TECHNOLOGY STRATEGY IN TAMIL NADU TOURISM

The proportion of Internet users in the target market is significantly higher. Therefore, an important objective of tourism policy is to make his Nadu in Tamil unique in its category or to create a niche product that appeals to the targeted his tourist cohort. As part of a strong digital marketing strategy, Ministry of Tourism will implement targeted pay-per-click advertising, search engine optimization techniques, and engaging content on the Tourism website. Through these measures, we can draw attention to the charm and beauty of Tamil Nadu and encourage tourists from all over the world to experience it.

SWACHH BHARAT MISSION

Impact of SWACHH BHARATH Awareness Programmes is visible specifically in the cases / situation of "Plastic use". Changes have been revealed in the fields of solid waste management, purification of drinking water, air etc.

During the current FY 2022-23, Ministry of Tourism has organized a total number of 541 programs under SAP to generate awareness for Swachh amongst tourists, students and tourism stake-holders of this country. The Department of Tourism has developed the "Tamil Nadu Tourism Policy," which aims to catalyze the tourism

industry to become a world leader employer and driver of economic growth. This policy seeks to grant tourism industry status and outlines targeted interventions, incentives, and regulatory changes to encourage private investment and participation in the sector. The goal is to create a sustainable tourism ecosystem in Tamil Nadu, with a focus on ensuring the safety and quality of the tourist experience, as well as creating a welcoming environment for tourism investment.

CONCLUSION

Technology has significantly impacted India's tourism industry, particularly in Tamil Nadu, by promoting sustainable travel practices and reducing environmental impact. Platforms like Booking.com and Airbnb showcase eco-friendly accommodations, while VR experiences reduce physical travel and carbon emissions. Big data helps the Tamil Nadu Tourism Department tailor marketing strategies and optimize resource allocation. Online bookings, smart tourism infrastructure, mobile apps, and SWACHH BHARATH Awareness Programmes encourage tourists to experience the beauty of Tamil Nadu. The "Tamil Nadu Tourism Policy" aims to create a sustainable tourism ecosystem in Tamil Nadu. New Guidelines for Ecotourism Policy of Tamil Nadu (2017), Preamble: Ecotourism is defined as „responsible travel to natural areas that conserves the environment and improves the well-being of local people“. Such tourism is low impact, educational and conserves the environment while directly benefiting the economic development of local people. It also promotes the nonconsumptive use of wilderness areas, for the benefit of local communities living around and dependent on these fragile landscapes. Tourists in Tamil Nadu are advocating for infrastructure improvements, waste management, public toilets, connectivity, signage, digital presence, standardized pricing, community engagement, niche development, and environmental protection practices. This study reveals that lot of efforts & initiatives are been taken at International level all over the World. Organizations like UNWTO, WTTC, WWF & International Ecotourism Society etc., are all involved in developing new concepts, forming policies & guidelines, initiating & promoting eco-friendly practices and sustainable tourism for conserving the natural resources for future generations.

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