



The Dual Edge of Tourism in Darjeeling Himalaya: Economic Growth vs Environmental Cost

Vinay Limbu, PhD
Assistant Professor
Department of Geography
Muralidhar Girls' College,
Kolkata, West Bengal, India
Email: vinaylimbu233@gmail.com

Abstract

Darjeeling, nestled in the Eastern Himalayas, is a popular tourist destination in North Bengal, India, known for its beautiful scenery, pleasant climate, and cultural richness. However, the rapid development of the tourism industry is causing serious environmental concerns in this region. This study is an empirical analysis of tourism development in the Darjeeling hills, integrating qualitative and quantitative data to assess its complex impact. The paper explores the major tourist attractions, evaluates their sustainability, and examines the complex relationship between economic benefits and environmental degradation. Findings reveal that while tourism contributes significantly to local income generation and employment, it simultaneously exerts pressure on natural resources, waste management, and fragile ecosystems. The study concludes with recommendations to promote sustainable tourism practices that balance economic development with ecological preservation in Darjeeling.

Keywords: Darjeeling tourism, environmental impact, sustainable development, economic growth, ecotourism.



Received: 31.10.2025

Accepted: 01.12.2025

Published: 31.12.2025

CJHSSC, Volume: 1

Issue: 2, December 2025

Page: 130 - 141

DOI: <https://doi.org/10.5281/zenodo.18259127>

Copyright: Author © 2025



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Published by: Seth Soorajmull Jalan Girls' College,
Kolkata, West Bengal, India

Available at: www.sjalangirlscollege.org.in/journal.php
Email: confluence.sjgc@gmail.com

"The traveller sees what he sees, the tourist sees what he has come to see."

– GK Chesterton

1. Introduction

Darjeeling stands as a tranquil hill station in the northernmost part of West Bengal. Characterised by its pristine natural environment, the scenic paradise offers affordable tourism. The undulating slopes and rugged terrain of the Darjeeling Himalayas allow the development of many plantations' estates with the world-famous Tea brands. These hundred-year-old Tea gardens received a Geographical Indication tag in 2003. The hill stations of Darjeeling, Kurseong, and Kalimpong were established as colonial outposts for leisure in the late 1800s (Dey & Choudhury, 2024). Darjeeling's reputation as a summer hill station dates back to the British colonial era, when the Britishers sought to reconstruct the cool, misty environment of their homeland for its picturesque landscape. Since then, Darjeeling, as the "Queen of Hills," has become a cherished region bringing substantial tourism and tea revenue. Post-Independence, Darjeeling remained a favoured retreat for wealthy travellers from the plains, drawn by its pleasant climate and scenic beauty, and to this day it has been an attraction for tourists seeking recreation and retreats.

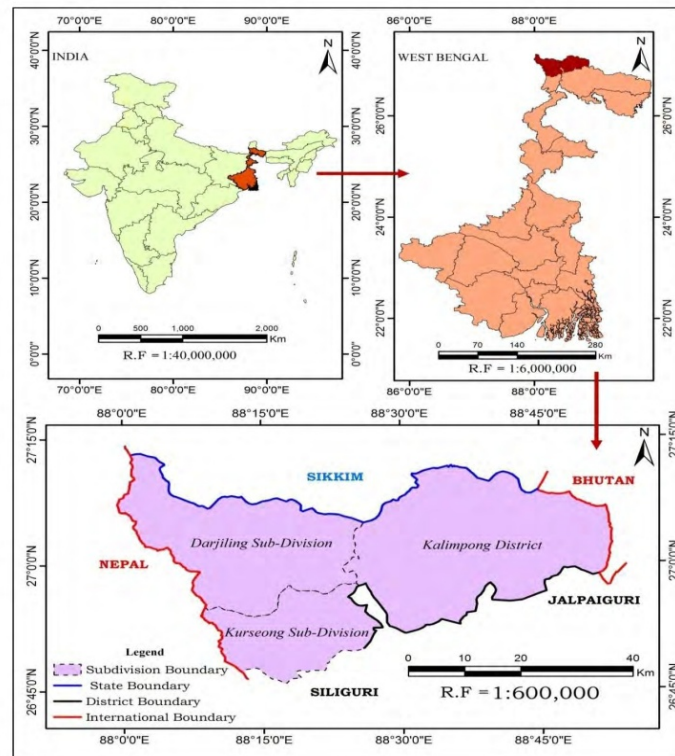
1.1 Rationale of the Study

The four important 'T's - Tea, Timber, Toy Train, and Tourism are the focal economic drivers of the Darjeeling hills. A substantial part of Darjeeling's development depends on the revenue generated from these sectors. Tea, Timber, and the Toy Train are also key components of the region's tourism industry. The present study aims to examine and understand the impact of these indicators as important elements of economic growth, and to explore the crucial role of tourism in improving the livelihoods of local people. The study also considers both social and economic perspectives, and assesses the environmental challenges affecting the Himalayan environment of Darjeeling and its adjoining areas.

1.2 Location of the Study Area

The Darjeeling district is located between the latitudinal extent of 26°31' and 27°13' north and the longitudinal extent of 87°59' and 88°53' east, with a total area of approximately 1,200 square miles. Darjeeling is the main town and administrative headquarters of the district, located at 27°3' north latitude and 88°16' east longitude (Dash, 1947). Darjeeling derived its name from the Tibetan words *dorje* and *ling*—*dorje* meaning "the precious stone" symbolizing the thunderbolt of Sakra (Indra), and *ling* meaning "place."

Thus, Darjeeling is interpreted as "the place of the dorje," referring to the mystic thunderbolt of the Lamaist religion. This name originally referred to the Buddhist monastery that once stood on Observatory Hill (O'Malley, 1907). Geographically, the district looks like an inverted triangle, with its base touching the state of Sikkim. Darjeeling extends from the mountainous terrain of Sikkim in the north to the low-lying plains of West Bengal in the south. It is strategically positioned between the neighbouring countries of Nepal and Bhutan. Several mountain ranges and rivers mark the boundary between Darjeeling and Sikkim (Rawat, 2022).

Figure 1: Location Map of the Study Area

2. Materials & Methods

2.1 Review of Literature

There is a wide range of literature available on the various aspects of tourism in the Darjeeling Himalaya and its adjoining areas. Dutta and Mukhopadhyay (2023) advocate for homestay tourism as a sustainable model to address the problems of overtourism and environmental degradation. Bhutia (2015), in his article, stresses the unplanned growth, poor infrastructure, and a handful of stakeholder engagement as major barriers to sustainable tourism, urging significant community participation. Bhattacharya (2014) opines that seasonal surges in tourist numbers strain municipal infrastructure, particularly in waste management, water supply, and transportation. The Darjeeling Chronicle (2023) worries about the unregulated tourism growth, reporting that over 70% of locals depend on the sector, which intensifies cultural pressures and environmental problems in the fragile Himalayan ecosystem. Rawat (2022) presents the broader picture of Sustainable rural tourism in the Darjeeling hills, emphasizing the development of tourism in the context of social, physical, and environmental factors. Ghosh and Mondal (2021) provide experiential evidence that eco-friendly practices and hospitality in homestay tourism significantly increase tourist satisfaction, thereby strengthening the potential of sustainable tourism.

2.2 Aims and Objectives

1. To explore the various dimensions of tourism development in the Darjeeling Hills.
2. To highlight the major tourist attractions and assess their impact.
3. To understand and examine both the positive and negative aspects of tourism.

2.3 Methodology

The present paper is based on empirical observations from various reports, journals, and online journals. Relevant literature was reviewed, and required assessments were conducted through personal observation at key locations. Information was gathered from news reports and from interactions with local individuals actively engaged in the tourism sector. The current tourism scenario and its impact on human resource development were analysed using secondary data and insights from the stakeholders and tourists' experiences. The collected data was also cross-verified through field experience to ensure reliability.

3. Development of Tourism Industry in Darjeeling

Tourism is widely recognised and considered as one of the leading and fastest-growing sectors. Tourism serves as a dynamic source of revenue and livelihoods. In recent years, the tourism industry of the Darjeeling district has experienced outstanding growth. In Darjeeling, tourism is one of the largest earners of foreign exchange after the tea industry (Limbu & Chettri, 2014). The months of March and December see many tourism activities in Darjeeling. The first peak season, which occurs from April to June, not only attracts a large number of foreign tourists but also boosts the local economy. The second season spans from October to November, during which domestic tourists, especially from other parts of West Bengal, visit the region. Despite various adverse effects of tourism on this small hill area, it remains a chief source of sustainable livelihood strategy for the local people. According to the Darjeeling tourist bureau, more than 400,000 people from across the country and around the world visit the area annually. The tourism sector in Darjeeling still holds immense potential for further development. With proper planning and effective management, this potential can be harnessed to boost income generation and promote regional development (Rai, 2020). The Development of Tourism in Darjeeling Himalaya can be examined and outlined from three developmental phases. The Colonial era, Post-Independence, and the Present (Sharma, 2012).

3.1. The Colonial Era (1835 – 1947)

The establishment of Darjeeling as a Summer capital or Sanatorium by Captain Lloyd in 1835 marked an important landmark in the history of Bengal. Darjeeling not only served as a summer capital but also treated invalid soldiers from the European war during the severe malaria outbreak in the Bengal plains. The arrival of Colonials not only changes the cultural setup but also alters the very geography of the place. The favourable climatic conditions allowed them to start Tea plantations on an experimental basis from 1840 to the establishment of the Tea Industry as a commercial enterprise in 1856 and the Planters' Club in 1868. The Tea estates rose in number from 113 tea gardens in 1874 to 148 tea gardens in 1905 (O'Malley, 1907).

Since then, Darjeeling has gained global popularity and is recognised as the Queen of the Hills. The introduction of the narrow-gauge railway is another iconic contribution of the Colonials, and it remains one of the most prominent attractions for tourists, offering a joyful ride. The Darjeeling Himalayan Railway, also known as the Darjeeling toy train, is one of the prides of India and a UNESCO World Heritage Site. The introduction of railways allows the inflow of people, boosting tourism in the regions. The Dak Bungalows were constructed for the officers and their families. The development of hotels around Darjeeling dates back to 1839, when the first hotel opened with 12 cozy rooms. The Wilson's Hotel was opened up in a two-

storied building with eighteen rooms. Thereafter, many hotels opened, including Nelson, Woodlands, Rockville, Bellevue, and Mount Everest (Sharma, 2012). The opening of missionary schools also promotes tourism in Darjeeling. Today, these schools cater to both national and international students. The Independence of India ended the colonial era, but its legacy remains in the arts and architecture of Darjeeling, boosting tourism and tea revenue.

3.2 Post Independence period (1947 – 1988)

The arrival and departure of the colonials in Darjeeling have left their impression and legacy in the form of art, culture, and architecture. The end of the colonial era in 1947 left a strong imprint on Darjeeling. This ancient architecture and heritage have made this area a tourist hotspot. The region's economy remains centred on tea, timber, and tourism. Since independence, tourism has grown rapidly, especially with the development of infrastructure and promotion by the Indian Government, including the formation of the Indian Tourism Development Corporation in 1965, followed by the West Bengal Tourism Development Corporation in 1975. The formation of the West Bengal Tourism Development Corporation in the Darjeeling hills brought systematic, more organised tourism. In the 1980s, new tourist destinations such as Mirik and Mangpu were developed to reduce pressure on the traditional visiting hubs of Darjeeling and Kalimpong. Adventure tourism, such as rafting and trekking, has also developed.

In 1988, the creation of the Darjeeling Gorkha Autonomous Hill Council, following political turmoil in the Darjeeling Hills, marked a shift in tourism administration, as responsibility for tourism development was transferred from the West Bengal Tourism Development Corporation to the hill council. The growth of tourism in Darjeeling in this period has come with inevitable consequences. The clearance of forests for hotels and roads disrupts the ecological balance. The expansion of urban areas has increased landslides and worsened water shortages (Sharma, 2012).

3.3 Present Status from 1988 onwards

The creation of the DGAHC in 1988 witnessed the unprecedented growth of the tourism sector until 2007. However, the resurgence of political instability in late 2007, driven by the statehood movement, led to a sharp decline in tourist arrivals. This downturn severely impacted the tourism industry and other economic sectors in the region, leading to an all-time low (Sharma, 2012). The establishment of the newly formed Gorkhaland Territorial Administration in 2012 renewed the setback to tourism with an initiative to support the local economy through homestays and offbeat destinations. Infrastructural improvements include the redevelopment of dilapidated popular sites. In 2019, official records show that the region welcomed 7.5 lakh domestic tourists and 42,000 international visitors. The Darjeeling Tourism industry suffered a setback during the pandemic. But in recent years, Darjeeling and its adjoining areas have been overwhelmed by tourists during the peak season and have struggled to accommodate the surge. The influx of tourists is significant for the growth of the local hospitality industry. Media reports in April noted that every hotel in Darjeeling was operating at full capacity (Telegraph 2025). But at the same time, the mounting pressure of overtourism is taking a toll on the region's fragile ecosystem and the lives of local residents. Currently, there is an urgent need for sustainable tourism development through proper management and effective administrative intervention.

3.4 Trends of Tourist Inflow in Darjeeling Hills

The Himalayan town of Darjeeling and its adjoining areas have been experiencing a considerable increase in tourist arrivals in recent years. The growth of tourism can be understood from the following facts.

- The increasing number of hotels from 68 in 1980 to 280 in 2010 to 1294 certified hotels and Homestays in 2025 (As per Darjeeling District Police Administration)
- The capacity of beds was 850 in 1980 and increased to 9,000 in 2010.
- The arrival of tourists has increased every year.
- The number of registered vehicles in Darjeeling has multiplied from a mere 10317 in 1995 to 22665 in 2009 (Sharma,2012).

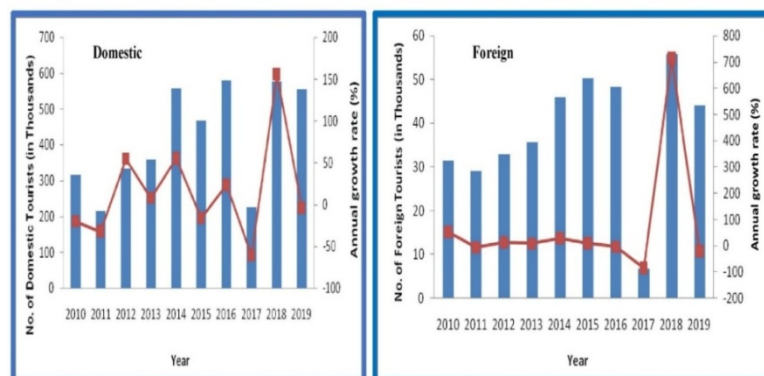
Table 1: The Arrival of Tourists in Darjeeling Hills (2001 – 2010)

Year	International Tourists	Domestic Tourist	Total Tourists
2001	11,100	242,986	254,086
2002	12,350	249,032	261,382
2003	18,700	284,315	303,015
2004	18,090	261,596	279,686
2005	27,218	415,901	443,119
2006	30,394	460,764	491,158
2007	29,669	444,253	473,922
2008	26,346	359,258	385,604
2009	23,819	342,813	366,632
2010	27,218	372,741	399,959

Source: Tourist Bureau Office, Darjeeling & Sharma (2012)

From Table 1, it is seen that tourist arrivals have surged, with total visitors rising from around 2.5 lakh in 2001 to a peak of nearly 5 lakh in 2006. Though this growth rate was not consistent, tremendous declines occurred in 2008 and 2009 due to political turmoil over the Gorkhaland movement and negative media coverage. Domestic tourists, particularly from various parts of Bengal and India, have consistently outnumbered foreign visitors, and their growth trend is more pronounced. Despite setbacks, the overall trend shows an increase in tourism, supported by a rise in registered vehicles and improved connectivity during the developmental phase of 2001 to 2010 (Sharma, 2012).

Figure 2: The Trend of Domestic and Foreign Tourist Inflow in Darjeeling



Source: Tourist Bureau Office, Darjeeling

As per the reports and records administered from the Tourism Department of West Bengal, the trends clearly show (Figure 3) the surge in tourists' arrivals in Darjeeling. It indicates the arrivals of both domestic and international tourists. The rising trend of tourists' arrivals is between 2010

and 2019. The highest influx was 632637 tourists in 2018 (Figure 3), of which 553862 were domestic, and 44057 were international visitors. The annual average growth rate of all kinds of tourists' arrivals grew to 17 % during this period. It has been observed that the rate of domestic tourists' arrival has increased from 372741 in 2010 to over 5.5 lakhs in 2019, averaging nearly 16.5% annual growth during that said period. Whereas, the international arrivals of tourists have also risen from 27218 in 2010 to 44057 in 2019, averaging around 70% annual growth during 2010-2019 (Sharma 2012 & NIHE Report 2022).

3.5 Tourism resources of the Darjeeling hills vis-à-vis Economic growth

Nature has endowed the Darjeeling hills with splendid scenic beauty and charm. The mesmerising valleys of Tea gardens, majestic snow-clad mountain dominating the skyline, rivers, and lush green forests of pines offers great attractions to tourists. These natural resources provide various outdoor activities to the tourists. It also provides employment opportunities to the locals by providing services to the tourists. The Darjeeling Himalaya stands tall with its natural bounty. The offbeat destinations lure tourists for their scenic corridors and exquisite trails, trekking to National parks like Sandakphu in Singalila National Park, birdwatching in the wildlife sanctuary, and river rafting have always been a tourist craze. The most notable and outstanding vantage tourism spots are present in the different parts of the districts.

3.6 Darjeeling Himalayan Railway & Economic Growth

The Himalayan Railway of Darjeeling, commonly referred to as the "Toy Train," is a narrow-gauge railway with a track width of just 2 feet (610 mm). It runs between New Jalpaiguri and Darjeeling, connecting the low-lying plains of Jalpaiguri with the hilly town of Darjeeling. The Darjeeling Toy Train, known for its iconic steam engines, has been operating since 1881 to till date. It has preserved its original charm and heritage. In the last 14 years, there has been a consistent growth in revenue of the Darjeeling Himalayan Railway. In 2010–11, it made just ₹60 lakhs, but by December 2023, it had made ₹19 crores, which is almost 30 times more. This growth shows that more and more people are interested in visiting DHR and that it is important to the economy in the area. The significant decline was seen in the years 2020–21 due to the COVID-19 pandemic. This shows how heavily DHR relied on tourism and resulted in a brief setback. Fortunately, the railway recovered swiftly. By 2029–2030, it is estimated that revenue may reach ₹25.74 crores if the present patterns continue. Therefore, the overall financial health of DHR demonstrates its significance to Darjeeling's tourism-driven economy and the need for long-term diversification and management (Lama, 2024).

3.7 Tiger Hill

Tiger Hill is one of the most popular tourist spots in Darjeeling. Every day, thousands of people come to see the famous sunrise views of Mount Kanchenjunga. A three-storey observatory has different features, and tickets cost between ₹10 and ₹40. The number of tourists steadily rose from 2011 to 2016 and reached over 2.3 lakh in 2014–15. But the visitor also had a bad experience due to poor facilities, not enough staff, and too many people. Even so, its beautiful scenery and easy access still draw tourists from different countries and from within the country. Tiger Hill's recreational value and potential for making money could be greatly improved by better management and infrastructure (Rai, 2020).

3.8 Tea Garden Tourism

Darjeeling is home to some of the oldest tea gardens, which date back to the colonial era. Today, estates like *Ging*, *Goomtee*, *Selim Hill*, *Singtam*, *Glenburn*, and *Makaibari Tea Estate* tucked in the misty hills have opened their doors to tourism, blending tea culture with colonial heritage and hospitality. This plantation area, where the climate favours the luxuriant growth of tea with aroma and flavour, brands Darjeeling tea globally. Old colonial bungalows, once lived by planters, have been restored into charming guesthouses, furnished with antiques and offering meals made from organic produce grown on the estates. The locals host homestays, providing visitors with a glimpse into traditional village life and livelihood. It is also one of the sources of income generation. Thus, tea tourism is considered to be a significant contributor to the local economy by creating jobs, promoting sustainable growth, and preserving cultural heritage (Sharma & Bhowmick, 2016).

4. Positive Impact of Tourism in Darjeeling Hills

Tourism has generated both direct and indirect employment opportunities in the Darjeeling hills. It emerged as a vital engine of economic growth, sustainable development, and livelihood diversification. Tourism in Darjeeling leads to the growth of different sectors like adventure tourism, hospitality, handicrafts, and especially homestays. Local communities have benefited significantly from the influx of tourists through homestay tourism. Rural tourism has completely transformed rural areas such as *Sittong*, *Makaibari*, and other far-flung remote areas into one of the best offbeat destinations (Ahmed & Chattopadhyay, 2016; Roy & Mitra, 2017).

Tourism led to increased income opportunities like tour guiding, food services, and craft-making (Das, 2020). Tourism plays an active catalyst in promoting cultural preservation by supporting traditional arts, crafts, festivals, and religious practices, as seen in the Darjeeling Carnival (Ghosh, 2018; Negi, 2005). Singalila and Neora Valleys enhance environmental awareness, supporting biodiversity conservation and community stewardship of natural resources through ecotourism (Chakraborty & Mazumdar, 2019; Bhutia, 2021).

Additionally, tourism has fostered balanced regional growth by developing satellite destinations such as *Mirik*, *Tekdoh*, and *Lamabhatta*, thereby easing urban pressures on Darjeeling town (Das, 2020). As a multifaceted tool for inclusive development, tourism in Darjeeling represents a strategic convergence of economic, cultural, and environmental interests when supported by sustainable planning and community involvement.

5. Negative Impact of Tourism in Darjeeling Hills

The Darjeeling hills offer diverse tourism experiences in the Eastern Himalayas. It is a renowned hill station for tea tourism, trekking, toy train rides, bird watching, nature-based tourism, forest safaris, and wellness tourism. The annual tourist influx of around 4.5 lakh visits the Darjeeling hills because of these attractions. The tourism industry has contributed to the regional economy (Das & Roy, 2016). Tourism supports local livelihoods, but its unregulated and unplanned expansion has led to significant environmental degradation (Rai, 2020).

5.1 Unplanned Urban Expansion

Rapid tourism has triggered the infrastructure expansion with the construction of multi-storeyed buildings and the widening of roads. The expansion and construction of urban buildings are replacing the vegetation with a concrete jungle (Sharma, 2012; Biswas & Pal, 2016). Limited land

availability within municipal boundaries has resulted in vertical construction that violates the height restrictions act. These unplanned developments in Darjeeling are altering the iconic landscape, obstructing views of Mt. Kanchenjunga and the Tea gardens.

5.2 Vegetation Loss

Deforestation is one of the most crucial environmental challenges associated with the rapid development of tourism in Darjeeling. Moreover, fuel wood collection and the clearing of land for constructing roads, hotels, and other infrastructure directly contribute to forest loss (Banu, 2019). The increasing effect not only fragments the forest habitats but also threatens biodiversity and diminishes the ecological services provided by forests (Banu, 2019).

5.3 Urban Sprawl

The loss of vegetation for the settlement, along with the development of the tea and tourism industry, marked the development of urbanisation or urban sprawl in the Darjeeling hills. The hilly town of the Darjeeling district has witnessed the growth of the urban population and structures. It has been observed that the population growth rate of Darjeeling town has increased from 1970 onwards at the district level (Banu, 2019). In addition to this, the town has to support the floating population of 20500 in the form of tourists, students, visitors, and wage earners (Chhetri & Tamang, 2013). Thus, the unplanned urbanisation and over-tourism have an adverse impact on the fragile environment.

5.4 Water Scarcity

Darjeeling town faces chronic water scarcity. The main water supply is sourced from two lakes built for 25,000–30,000 residents during the colonial era, and now serves nearly 200,000 people. The lakes derive water from 26 springs in Senchal Forest (Ghatani, 2021). The lack of reservoirs, aging infrastructure, and delays in the Balasun project worsen the water crisis. Despite receiving abundant rainfall, residents often buy expensive tanker water, costing ₹900–1000 per 5000–6000 litres. It is due to poor storage facilities, which leads to massive water wastage. Tourism further aggravates the water supply, with hotels forced to ration water. Darjeeling's water crisis continues to affect both the tourism industry and locals without sustainable management and storage. The excessive demand for water by hotels and tourists intensified water scarcity, forcing hotels to purchase water from private suppliers during peak seasons. During the tourist season, on average, each hotel is forced to buy around 2-3 tankers of water every day (Merinews, 2013). The total demand for water in the Darjeeling town is 75 lakh litres per day, while the total supply is 24 lakh litres per day with a deficit of 50 lakh litres per day (Jana and Tamang, 2017).

5.6 Solid Waste Management Crisis

Solid waste management is one of the main problems of concern in Darjeeling. The hill areas daily produce heaps of solid waste of 50 tons approximately, but only 62% is disposed of properly. Darjeeling municipality alone generates about 66.38 MT/day of waste (Limbu, 2014). The region lacks adequate treatment and waste segregation facilities. Therefore, during the peak tourist season, the daily waste production is doubled without any proper disposal. The composting is limited, and the central facilities like bio methanation units are absent, which makes the situation worrisome. (District Environment Plan, 2021).

6. Conclusion

Tourism is one of the most important economic pillars in the Darjeeling Hills. It contributes nearly 30% of the region's business and revenue generator. The Darjeeling region, with its scenic beauty and natural charm, attracts approximately 4.5 lakh domestic and 50,000 foreign tourists every year. The tourist influx boosts the local economy, generates employment, and increases demand for local products. However, in the peak tourist season, it puts immense pressure on local infrastructure. Water Scarcity, traffic congestion, deteriorating municipal services, and a lack of proper tourist accommodation are the major problems creating a chaotic situation. Unregulated and rapid urban growth, with the rise of hotels, shops, and restaurants, has led to the destruction of Darjeeling's scenic beauty. The felling of trees to accommodate expansion has disturbed the region's ecological balance. Despite these challenges, tourism is one of the main economic supports alongside tea and timber. The natural beauty, diverse culture, rich heritage, and unique biodiversity attract tourists, but with the lack of proper management and sustainability, environmental safeguards are at risk. The rampant deforestation, pollution, and waste management are threatening the health and hazards. Though ecotourism and rural tourism have gained some momentum in recent years, the core essence of sustainable tourism is neglected, resulting in overtourism. As tourism in Darjeeling is largely seasonal, it exposes the economic vulnerabilities. Many people are left unemployed in the off-season. Therefore, to safeguard both the environment and the local economy. There is an urgent need for well-planned and executed Tourism development policies prioritizing the ecological aspects, local economy, and livelihood strategies.

References

- Ahmed, S., & Chattopadhyay, S. (2016). Tourism and infrastructure development in hill areas: A study of Darjeeling. *Himalayan Journal of Development Studies*, 4(1), 31–47.
- Banu, S. (2019). Effects of tourism on natural environment of the hilly region of Darjeeling. *JETIR*, 6(1).
- Basu, S. (2006). *Depletion of forest in the Darjeeling hill areas: A comparative study of landslide and related phenomena in the Darjeeling hills and their control* [Doctoral dissertation]. Shodhganga. <https://shodhganga.inflibnet.ac.in>
- Bhatia, A. K. (2002). *Tourism development: Principles and practices*. Sterling Publishers.
- Bhattacharya, S. (2014). Sustainable urban development in tightly constrained areas: A case study of Darjeeling, India. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 7(1), 61–80. <https://doi.org/10.1080/19463138.2014.883994>
- Bhutia, P. (2021). Ecotourism and biodiversity conservation in Singalila National Park. *Eastern Himalayan Environment Review*, 5(2), 76–88.
- Bhutia, S. (2015). Sustainable tourism development in Darjeeling hills of West Bengal, India: Issues. *Global Journal of Human-Social Science: B Geography, Geo-Sciences, Environmental Science & Disaster Management*, 15(2), 1–8.
- Cajee, L. (2018). Physical aspects of the Darjeeling Himalaya: Understanding from a geographical perspective. *ISOR Journal of Humanities and Social Science*, 23(3), 66–79.
- Chakraborty, P., & Mazumdar, K. (2019). Tourism, environment and sustainable development in Eastern Himalayas. *Indian Journal of Regional Development*, 38(1), 101–118.

- Chhetri, B., & Tamang, L. (2013). Population growth and associated problems: A case study of Darjeeling town. *International Journal of Humanities and Social Science Invention*, 2(5), 26–34.
- Darjeeling Chronicle. (2023, April). Unsustainable tourism in the hills of Darjeeling. *The Darjeeling Chronicle*. <https://thedarjeelingchronicle.com/current-set-unsustainable-tourism-in-darjeeling/>
- Das, B. (2020). *Socio-economic impact of tourism in Darjeeling hills*. North Bengal University Press.
- Dash, A. J. (1947). *Bengal district gazetteers: Darjeeling*. Bengal Government Press.
- Dey, A., & Choudhury, S. (2024). Stagnating between tea and tourism: How the Darjeeling hills may have caught the Dutch disease. *SPRF*. <https://sprf.in/stagnating-between-tea-and-tourism-how-the-darjeeling-hills-may-have-caught-the-dutch-disease/>
- Dutta, S., & Mukhopadhyay, D. (2023). Homestay tourism: A viable alternative to the perils of overtourism in the Darjeeling hills of West Bengal, India. *Environment Conservation Journal*, 24(1), 44–56. <https://doi.org/10.36953/ECJ.25732730>
- Ghatani, S. (2021). Problems and challenges on urban water management in Darjeeling hill town. *Asian Research Journal of Arts & Social Sciences*, 13(2), 24–33.
- Ghosh, S. (2018). *Cultural heritage and tourism in the Eastern Himalayas*. Kalpaz Publications.
- Ghosh, S., & Mondal, B. (2021). Understanding sustainable homestay tourism as a driving factor of tourists' satisfaction through structural equation modelling: A case of Darjeeling Himalayan region, India. *Journal of Hospitality and Tourism Management*, 49, 361–370. <https://doi.org/10.1016/j.jhtm.2021.07.002>
- Jana, S. K., & Tamang, P. (2017). Water scarcity in the hill town of Darjeeling: Effects on women's health. *International Journal of Human Resource Research Review*, 5(7).
- Lama, A. (2024). Impact of Darjeeling Himalayan Railway on the local livelihood: A case study of Darjeeling municipality. In Chowdhury & Saha (Eds.), *Proceedings of the International Conference on Emerging Issues in Environment, Livelihood and Development: A future road map towards sustainable Earth*. University of North Bengal Press.
- Limbu, V., & Chettri, I. (2014). Village tourism in Darjeeling Himalaya: Ensuring sustainable development and rural livelihood. *Salesian Journal of Humanities & Social Sciences*, 5(2), 37–43.
- Limbu, D. (2014). Solid waste management in the town of Darjeeling: Environmental concern. *International Journal of Humanities and Social Science Invention*, 3(6).
- Merinews. (2013). Power to people: Darjeeling and its daily struggle for water. *Merinews*.
- Negi, J. (2005). *Tourism and cultural heritage of India*. Gyan Publishing House.
- O'Malley, L. S. S. (1907). *Bengal district gazetteers: Darjeeling*. Bengal Secretariat Book Depot.
- Rai, B. (2020). Natural endowment and tourism in the hills: A case study of Darjeeling. *International Journal of Research and Innovation in Social Science*, 4(4).
- Rai, R. (2020). Ecotourism potential in the Darjeeling hills: Prospects, challenges and possibilities. *EPR International Journal of Multidisciplinary Research*, 6(9), 228–233.
- Rawat, S. (2020). Rural tourism and sustainable development in Darjeeling hills, West Bengal: Case study of Lepchajagat. *Juni Khyat*, 10(5), 18–34.
- Rawat, S. (2022). *Sustainable rural tourism in Darjeeling Himalaya* [Doctoral dissertation, University of North Bengal]. Shodhganga. <https://shodhganga.inflibnet.ac.in>
- Roy, R., & Mitra, D. (2017). Rural tourism development in Kurseong and Mirik. *Geographical Review of India*, 79(3), 255–270.

- Sharma, S. K., & Bhowmick, S. (2016). 'Tea tourism in Darjeeling. *IJARIE*, 2(4).
https://ijarie.com/AdminUploadPdf/TEA_TOURISM_IN_DARJEELING_ijarie3016.pdf
- Sharma, P. R. (2012). *Comparative study of past and present environment: A study in environmental degradation in the Darjeeling hill areas* [Doctoral dissertation, University of North Bengal].
Shodhganga. <https://shodhganga.inflibnet.ac.in>
- Sikkim Express. (2023, July). Structural vulnerabilities in the Darjeeling hills: The case for economic diversification and industrial transition. *Sikkim Express*.
<https://www.sikkimexpress.com/news-details/structural-vulnerabilities-in-the-darjeeling-hills>
- Singh, S. (2012). *Ecotourism: Development and impact*. I.K. International Publishing House.
- The Telegraph India. (2024). Various articles on GTA tourism initiatives and outcomes. *The Telegraph India*. <https://www.telegraphindia.com>
- West Bengal Pollution Control Board. (2021). *District environment plan report, West Bengal 2021*. Government of West Bengal.
- West Bengal Tourism Department. (2020). *Annual report 2019–2020*. Government of West Bengal. <https://darjeelingpolice.wb.gov.in/CertifiedHotelsandHomestays>