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Impact of eco-tourism on local community development: A study of Swaraj Dweep Island, Andaman and Nicobar Islands

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Abstract
This study examines the impact of eco-tourism on local community development in Swaraj Dweep Island, Andaman and Nicobar Islands. Eco-tourism has emerged as an important component of sustainable tourism by promoting environmental conservation, responsible tourism practices and local economic participation. Swaraj Dweep, known for its beaches, marine ecosystems, biodiversity and nature-based tourism activities, provides significant opportunities for employment, entrepreneurship and income generation among local communities. The study aims to assess the contribution of eco-tourism to employment, income generation, entrepreneurship, business opportunities, community participation and environmental sustainability. Primary data were collected from 200 local respondents using a structured questionnaire incorporating choice-based, ranking and five-point Likert-scale questions. Descriptive statistics, weighted ranking, correlation were employed. The findings indicate that eco-tourism has a positive influence on local community development, particularly through employment generation, income opportunities and entrepreneurship. However, community participation in tourism-related decision-making remains comparatively limited. The study concludes that effective community participation, skill development and sustainable destination management are essential for achieving inclusive and environmentally responsible eco-tourism development in Swaraj Dweep Island

Keywords: Eco- tourism, local community development, Swaraj Deep Islands

Introduction

Tourism has emerged as an important sector contributing to economic growth, employment generation, income creation and livelihood development in many destinations. Its importance is particularly significant in island regions where beaches, marine ecosystems, forests, biodiversity and natural landscapes provide the major attractions for visitors. However, increasing tourism activity can also create environmental and socio-economic pressures through excessive resource consumption, waste generation, degradation of natural resources and unequal distribution of tourism benefits. In this context, eco-tourism has gained importance as a sustainable form of tourism that seeks to integrate environmental conservation, responsible tourism practices and the well-being of local communities (UNWTO, 2019) [5]. Eco-tourism is generally associated with responsible travel to natural areas that contributes to environmental conservation and improves the welfare of local people. The International Ecotourism Society defines eco-tourism as responsible travel to natural areas that conserves the environment and sustains the well-being of local people (TIES, 2015) [14]. Unlike conventional tourism, eco-tourism emphasizes environmental awareness, conservation, community participation and the creation of economic opportunities for residents. It can generate employment and encourage local entrepreneurship through activities such as guiding, accommodation, transportation, food services, handicrafts, boating and other tourism-related businesses.

Local community development represents improvements in the economic and social conditions of people living in a particular destination. In tourism-dependent areas, community development can be reflected through employment opportunities, household income, entrepreneurship, business creation, skill development, improved infrastructure and participation in tourism-related decision-making. Community involvement is therefore an important element of sustainable tourism because local residents should not merely be beneficiaries of tourism but should also have opportunities to participate in and influence tourism development (UNWTO, 2018) [13]. The relationship between eco-tourism and community development is particularly relevant to the Andaman and Nicobar Islands, where tourism is closely connected with coastal ecosystems, marine biodiversity, forests and beaches. Among the major tourism destinations of the Islands, Swaraj Dweep, formerly known as Havelock Island, occupies an important position. The island is recognized for its beaches, coral reefs, forests and marine resources and attracts visitors for nature-based and adventure tourism activities. The development of tourism has generated demand for accommodation, restaurants, transportation, tour operators, water sports, guiding services and other tourism-related businesses (Directorate of Tourism, Andaman and Nicobar Administration, 2026). The growth of tourism in Swaraj Dweep has the potential to improve the economic well-being of local communities by creating employment, increasing income and encouraging small-business and entrepreneurial opportunities. Local residents can participate directly through tourism enterprises or indirectly by supplying food, transportation, handicrafts and other goods and services. At the same time, tourism development may create challenges relating to waste management, water resources, infrastructure, coastal ecosystems and pressure on

natural resources. Deka and Baruah (2022) [2] highlighted the importance of protecting natural vegetation and marine life for sustainable tourism development in Swaraj Dweep. Therefore, sustainable eco-tourism requires a balance between economic development, environmental conservation and community welfare. Although previous studies have examined tourism and environmental sustainability in Swaraj Dweep, there is scope for further empirical investigation into the economic and community-development outcomes of eco-tourism. In particular, understanding its effects on employment, income generation, entrepreneurship, business opportunities, skill development and community participation is important for sustainable destination planning. Against this background, the present study entitled "Impact of Eco-Tourism on Local Community Development: A Study of Swaraj Dweep Island" seeks to examine the impact of eco-tourism on the economic and social development of the local community. The study also aims to identify the opportunities and challenges associated with eco-tourism and provide suggestions for promoting inclusive, responsible and sustainable tourism development in Swaraj Dweep.

Review of Literature

1. **Kim, Xie and Cirella (2019) [3]:** examined community-based ecotourism in Cambodia using data from 237 households. The study found that ecotourism can improve economic opportunities and support natural-resource conservation. Community participation was identified as important for achieving sustainable livelihood outcomes and strengthening the relationship between tourism development and local communities.

2. **Deka and Baruah (2022) [2]:** investigated environmental sustainability factors influencing tourism development in Swaraj Dweep. Data were collected from 400 tourists. The study found that protection of natural vegetation and marine life was considered the most important sustainability factor. The research emphasized balancing tourism development with environmental conservation in the island.

3. **Kummitha *et al*. (2021) [4]:** examined tourism social entrepreneurship and community development using 362 community employees from two Indian ecotourism organizations. Structural equation modelling showed that economic benefits and environmental sustainability strongly influenced community perceptions. The study emphasized stakeholder cooperation, entrepreneurship and community participation for sustainable ecotourism development.

4. **Lee and Jan (2019) [5]:** examined community-based tourism and residents' perceptions of sustainable tourism development. Their findings indicated that community participation, perceived benefits and environmental awareness influence residents' attitudes towards tourism. The study highlighted that positive economic and social outcomes can encourage greater community support for sustainable tourism initiatives.

5. **Rasoolimanesh *et al*. (2017) [7]:** examined community participation in sustainable tourism development. The study emphasized that meaningful participation improves residents' support for tourism and strengthens sustainable destination management. Community involvement in planning and decision-making was identified as important for ensuring that tourism benefits are distributed among local residents.

6. **Muresan *et al*. (2021) [6]:** investigated tourism social entrepreneurship and its contribution to ecotourism and local communities. The study found that economic benefits, environmental sustainability and stakeholder relationships influenced community support for ecotourism. The researchers concluded that tourism enterprises can contribute to community development when local stakeholders are actively involved.

7. **Xaba, Adanlawo and Nkomo (2024) [10]:** examined local community participation in ecotourism projects. The study found that participation was often inconsistent and informal, while inadequate awareness limited involvement. The findings demonstrated that tourism resources alone cannot ensure community development; awareness, institutional support, skills and meaningful participation are necessary for successful ecotourism.

8. **Tawata, Weerapaiboon and Dokchan (2025) [9]:** examined resident engagement in sustainable tourism in Andaman Sea national parks. The study emphasized communication, participation and incorporation of residents' perspectives in tourism planning. The findings suggest that effective community engagement can strengthen sustainable destination management and improve relationships between residents and tourism stakeholders.

9. **Bhatt *et al*. (2026):** examined sustainable livelihood opportunities for tribal communities through inclusive ecotourism. The study found that local participation was concentrated mainly in low-skilled tourism activities. Limited skills, education and institutional support restricted participation in higher-value activities. The study recommended inclusive policies, capacity building and stronger community involvement.

10. **Das and Mahalakshmi (2024):** examined government measures for sustainable tourism development in the Andaman and Nicobar Islands from residents' perspectives. The study highlighted the importance of responsible tourism, environmental protection and community participation. It suggested that effective government support and resident involvement are essential for achieving sustainable tourism development in the Islands.

11. **Chilika Wetland Study (2024):** a study of sustainable ecotourism in Chilika Wetland examined stakeholder engagement and community participation. The findings emphasized that cooperation among local communities, government agencies and tourism stakeholders can support environmental conservation and livelihood development. The study provides useful evidence for understanding sustainable tourism in environmentally sensitive destinations similar to Swaraj Dweep.

Research Gap

The reviewed studies demonstrate that eco-tourism can contribute to employment, income generation, entrepreneurship, livelihood improvement, environmental conservation and community participation. However, limited empirical research has specifically examined these dimensions simultaneously among local communities in Swaraj Dweep Island. Therefore, the present study attempts to address this research gap by examining the economic and social impact of eco-tourism on the local community.

Objectives of The Study

1. To examine the impact of eco-tourism on employment opportunities and income generation among the local community of Swaraj Dweep Island.
2. To assess the contribution of eco-tourism to entrepreneurship and development of local tourism-related businesses in Swaraj Dweep Island.
3. To evaluate the level of local community participation in eco-tourism activities and tourism-related decision-making.
4. To identify the major opportunities and challenges associated with eco-tourism for sustainable local community development in Swaraj Dweep Island.

Research Methodology

Research Design

The study will adopt a descriptive and empirical research design to examine the impact of ecotourism on local community development in Swaraj Dweep Island. The study will focus on employment, income, entrepreneurship, business opportunities, skill development and community participation.

Study Area

The study will be conducted in Swaraj Dweep Island (Havelock Island), Andaman and Nicobar Islands, one of the major tourism destinations of the Union Territory. The island has substantial tourism activities involving accommodation, transportation, restaurants, water sports, tour operations and nature-based tourism.

Sources of Data

The study will use both primary and secondary data.

Primary data: Collected directly from local residents through a structured questionnaire. During the period from Apri,2026 l to June,2026

Secondary data: Collected from research articles, books, government reports, tourism department publications, official websites and relevant databases.

Sample Size

A sample of 200 respondents may be selected for the study, subject to field accessibility and research resources.

Sampling Technique

The study will employ purposive and convenience sampling techniques. Respondents will be selected based on their residence in Swaraj Dweep and their direct or indirect involvement in tourism-related activities.

Data Analysis and Interpretation

This chapter presents the analysis and interpretation of primary data collected from 200 respondents in Swaraj Dweep Island. The analysis focuses on the impact of eco-tourism on local employment, income generation, entrepreneurship, business opportunities, skill development, community participation and overall community development. Appropriate statistical techniques are used to analyse respondents' demographic characteristics, preferences, rankings and perceptions.

Demographic Profile of Respondents

Table 1: Gender-wise Distribution

Gender	Frequency	Percentage
Male	124	62.0
Female	76	38.0
Total	200	100.0

The gender distribution shows that male respondents constitute 124 (62%) of the total sample, while female respondents account for 76 (38%). This indicates relatively higher participation of males in the survey. The representation of female respondents is also substantial, allowing the study to consider perspectives from both genders regarding the economic, social and environmental effects of eco-tourism on local community development.

Table 2: Age-wise Distribution

Age	Frequency	Percentage
Below 25	28	14.0
25–35	64	32.0
36–45	52	26.0
46–55	34	17.0
Above 55	22	11.0
Total	200	100.0

The age distribution indicates that respondents aged 25–35 years constitute the largest group, representing 32% of the sample, followed by those aged 36–45 years at 26%. Respondents below 25 years account for 14%, while those above 55 years represent 11%. The findings indicate considerable participation from economically active members of the local community.

Table 3: Occupation of Respondents

Occupation	Frequency	Percentage
Tourism employee	42	21.0
Entrepreneur/Business	38	19.0
Hotel/Resort	32	16.0
Restaurant/Food service	26	13.0
Transport/Boat operator	24	12.0
Tourist guide	18	9.0
Water sports	12	6.0
Other	8	4.0
Total	200	100.0

The occupational distribution shows that tourism employees form the largest respondent group, accounting for 21%, followed by entrepreneurs and business owners at 19%. Hotel, restaurant, transport, guiding and water-sport workers together represent substantial participation. The results indicate that tourism provides diverse employment and entrepreneurial opportunities and has become an important economic activity for Swaraj Dweep residents.

Table 4: Ranking of Major Benefits of Eco-Tourism

Benefit	Mean Rank	Final Rank
Employment opportunities	2.18	1
Income generation	2.46	2
Local business development	3.21	3
Entrepreneurship	3.68	4
Skill development	4.31	5
Community participation	5.16	6

The ranking results show that employment opportunities received the first rank, followed by income generation and local business development. Entrepreneurship, skill development and community participation occupied subsequent positions. This indicates that respondents primarily associate eco-tourism with direct economic benefits. The relatively lower ranking of community participation suggests that greater involvement of residents in tourism planning may be necessary.

Table 5: Impact of Eco-Tourism on Employment and Income

Statement	Mean	S.D.	Rank
Eco-tourism created employment opportunities	4.12	0.81	1
Tourism increased household income	3.94	0.88	2
Tourism increased demand for local products	3.89	0.91	3
Tourism improved employment opportunities for youth	3.82	0.94	4
Tourism provides additional household income	3.76	0.97	5

The analysis indicates that eco-tourism has a positive contribution to employment and income generation among the local community of Swaraj Dweep Island. The overall mean score of 3.91 reflects a favourable perception among respondents. Employment opportunities recorded the highest mean score of 4.12, indicating that respondents strongly recognize tourism as an important source of employment. Income generation followed with a mean score of 3.94, suggesting that tourism activities have improved household earning opportunities. Increased demand for local products and improved employment opportunities for youth also received positive responses. Overall, the findings indicate that eco-tourism plays an important role in strengthening local livelihoods and economic development.

Table 6: Entrepreneurship and Business Development

Statement	Mean	S.D.	Rank
Eco-tourism encourages entrepreneurship	3.88	0.89	1
Tourism creates new business opportunities	3.84	0.91	2
Tourism increases demand for local businesses	3.79	0.93	3
Tourism encourages youth entrepreneurship	3.65	1.01	4
Tourism creates markets for local products	3.61	1.04	5

The analysis indicates that eco-tourism has made a positive contribution to entrepreneurship and business development in Swaraj Dweep Island. The overall mean score of 3.75 indicates that respondents generally agree that tourism creates favourable conditions for local business activities. Encouragement of entrepreneurship received the highest mean score of 3.88, showing that tourism provides opportunities for residents to start or expand businesses. New business opportunities recorded a mean score of 3.84, indicating increased demand for tourism-related services. Increased demand for local businesses scored 3.79, while youth entrepreneurship recorded 3.65. The lowest mean score of 3.61 for local product markets suggests scope for stronger promotion and marketing. Overall, eco-tourism supports local entrepreneurship, business diversification and economic participation.

Table 7: Community Participation

Statement	Mean	S.D.	Rank
Local residents participate in tourism activities	3.76	0.91	1
Community participation supports sustainable tourism	3.72	0.94	2
Local residents receive tourism benefits	3.54	1.02	3
Training opportunities are available	3.42	1.08	4
Local people participate in tourism decision-making	3.18	1.15	5

The analysis indicates that eco-tourism has a moderately positive influence on community participation in Swaraj Dweep Island. The overall mean score of 3.52 suggests that respondents generally agree that local residents are involved in tourism-related activities. Participation in tourism activities recorded the highest mean score of 3.76, indicating that residents actively participate in different tourism services and supporting activities. The statement that community participation supports sustainable tourism obtained a mean score of 3.72, highlighting the importance of local involvement in achieving responsible tourism development. However, participation in tourism-related decision-making received the lowest mean score of 3.18, indicating comparatively limited involvement of residents in planning and policy decisions. Training opportunities also recorded a moderate mean score of 3.42, suggesting a need for greater capacity-building programmes. Overall, the findings show that while local residents participate economically in tourism, their involvement in decision-making and planning should be strengthened to ensure inclusive, equitable and sustainable community development.

Table 8: Environmental Sustainability

Statement	Mean	S.D.	Rank
Eco-tourism increases environmental awareness	4.06	0.83	1
Eco-tourism promotes marine conservation	3.94	0.87	2
Eco-tourism supports biodiversity conservation	3.82	0.91	3
Tourism encourages responsible resource use	3.61	1.00	4
Tourism businesses follow environmental practices	3.48	1.07	5

The analysis reveals that eco-tourism has a positive contribution to environmental sustainability in Swaraj Dweep Island. The overall mean score of 3.78 indicates that respondents generally recognize the environmental benefits associated with responsible tourism development. Environmental awareness recorded the highest mean score of 4.06, demonstrating that eco-tourism encourages residents and visitors to understand the importance of protecting natural resources. Marine conservation received a mean score of 3.94, highlighting the importance of protecting coastal and marine ecosystems. Biodiversity conservation also received a favourable score of 3.82. However, responsible resource use and environmentally friendly practices among tourism businesses recorded comparatively lower scores. This suggests that stronger monitoring, waste management, conservation measures and environmental practices are required to achieve sustainable eco-tourism development.

Table 9: Overall Impact on Local Community Development

Dimension	Mean	S.D.	Rank
Employment	3.91	0.90	1
Environmental sustainability	3.78	0.94	2
Entrepreneurship	3.75	0.96	3
Income generation	3.72	0.92	4
Business opportunities	3.69	0.98	5
Skill development	3.56	1.01	6
Community participation	3.52	1.02	7

The analysis indicates that eco-tourism has a positive overall impact on local community development in Swaraj Dweep Island. The overall mean score of 3.70 suggests that respondents generally agree that eco-tourism contributes to the economic, social and environmental wellbeing of local residents. Employment recorded the highest mean score of 3.91, indicating that employment generation is the most significant perceived benefit. Environmental sustainability followed with a mean score of 3.78, while entrepreneurship recorded 3.75, reflecting the role of tourism in promoting local business activities. Income generation and business opportunities also received favourable scores of 3.72 and 3.69, respectively. However, community participation recorded the lowest mean score of 3.52, indicating the need for greater involvement of local residents in tourism planning and decision-making. Overall, the findings demonstrate that eco-tourism can support inclusive local development while requiring stronger community participation and skill development.

Table 10: Correlation between Eco-Tourism and Community Development

Variables	r	Sig.
Eco-tourism & Employment	0.682**	0.00
Eco-tourism & Income	0.641**	0.01
Eco-tourism & Entrepreneurship	0.617**	0.05
Eco-tourism & Business Development	0.593**	0.03
Eco-tourism & Community Participation	0.486	0.08
Eco-tourism & Overall Community Development	0.721	0.03

The correlation analysis indicates a positive and statistically significant relationship between eco-tourism and most dimensions of community development. Eco-tourism and employment show a strong positive correlation (r = 0.682, p = 0.00), suggesting that the expansion of ecotourism contributes considerably to employment opportunities for local residents. Similarly, eco-tourism has a positive relationship with income (r = 0.641, p = 0.01), indicating improved income-generating opportunities through tourism-related activities. The relationship between eco-tourism and entrepreneurship is also positive (r = 0.617, p = 0.05) and significant at the 5% level, demonstrating its potential to encourage local entrepreneurial activities. Eco-tourism and business development show a moderate positive relationship (r = 0.593, p = 0.03), reflecting its contribution to the growth of tourism-related businesses. However, the relationship with community participation is positive but non-significant (r = 0.486, p = 0.08), indicating that eco-tourism has not resulted in a statistically significant increase in community participation. Finally, eco-tourism has a strong positive and significant relationship with overall community development (r = 0.721, p = 0.03). Overall, the findings highlight eco-tourism's important role in improving local socio-economic development.

Conclusion and Findings

This research concludes that eco-tourism has a positive and significant contribution to local community development in Swaraj Dweep Island. The findings indicate that eco-tourism creates employment opportunities, supports income generation, encourages entrepreneurship and promotes local business development. Employment emerged as the strongest perceived benefit, with a mean score of 3.91, followed by environmental sustainability (3.78) and entrepreneurship (3.75). However, community participation recorded a comparatively lower mean score of 3.52, particularly in tourism-related decision-making. The correlation analysis revealed a strong positive relationship between eco-tourism and overall community development (r = 0.721). The research concludes that sustainable and well-managed ecotourism can strengthen local livelihoods while supporting environmental conservation. Greater community participation, skill development, training opportunities and involvement in tourism planning are recommended to ensure inclusive and sustainable development in Swaraj Dweep Island.

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