

Utilisation of Natural Resources for Ecotourism Development in Community Service Programme

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ABSTRACT

Community-based ecotourism (CBET) is one of the most popular ecotourism programs in the world. This study uses a qualitative descriptive approach that aims to comprehensively describe the process of utilizing natural resources in developing ecotourism through community service programs. Data collection was conducted through several main techniques, namely participant observation, in-depth interviews, and focus group discussions (FGDs). Focus group discussions were aimed at key informants who had knowledge and active involvement in ecotourism development, to explore experiences, challenges, and strategies used in program implementation. Thematic analysis techniques were used to identify patterns, main themes, and relationships between variables in the context of ecotourism based on the use of natural resources. The results of the quantitative descriptive analysis show that the level of community participation in the ecotourism activities is in the very high category, with an average score of 4.21 out of 5 and a participation frequency of 87.5%. High community involvement, the formation of institutions such as Pokdarwis, and increased environmental understanding indicate that the Community-Based Ecotourism model can be implemented effectively at the village level.

Keywords : Community Based Ecotourism, Natural Resource Utilization, Local Community Empowerment

INTRODUCTION

Sustainable management and utilization of natural resources is one of the main challenges and opportunities in community-based development efforts. In this context, ecotourism or nature-based tourism is present as an approach that balances environmental conservation and improving the economic welfare of local communities (Tilavova et al., 2024). This approach places the community as the main actor and beneficiary of environmentally friendly tourism activities.

Community-based ecotourism (CBET) has been shown to support biodiversity conservation and socio-economic empowerment of local communities (Samal & Dash, 2023). In various regions,

ecotourism has become a strategic tool to empower vulnerable groups, including farmers and fishermen, and strengthen their capacity to manage resources independently (Wiyono et al., 2023).

The utilization of natural resources through ecotourism not only has an impact on the economic aspect, but also creates a high awareness of environmental conservation among local communities (Peng, 2024). Activities such as forest conservation, mangrove restoration, and waste management are an integral part of modern ecotourism practices (Faubiany et al., 2024).

However, successful ecotourism implementation requires community readiness, appropriate policy support, and an inclusive management framework (Chong et al., 2021). Research shows that communities with understanding and skills in ecotourism management tend to be more successful in preserving natural resources while gaining economic benefits.

In the context of community service, programs that integrate training, institutional facilitation, and ecotourism business assistance have shown positive results, especially in increasing active community participation in the development of natural tourism destinations (Lelloltery & Sitanala, 2023). For example, the program in Negeri Hutumuri showed that intensive outreach was able to give rise to initiatives to form tourism awareness groups.

Community service programs targeting ecotourism must also pay attention to the synergy between preserving local culture and involving the younger generation in conservation and tourism promotion activities (Kurniawan et al., 2023). This is crucial so that ecotourism activities do not just become a momentary trend, but become a long-term development model.

In Indonesia, several case studies such as in Gunung Dago and Seloliman show that approaches that prioritize local participation and strengthening community institutions have a positive impact on forest conservation and village economic development (Pradana & Juliana, 2023; Wiyono et al., 2023).

In the long term, synergy between the utilization of natural resources and community service programs in the field of ecotourism can strengthen the socio-ecological resilience of tourist villages. The key to success lies in collaboration between academics, government, tourism actors, and local communities (Mohanty et al., 2024).

Thus, the writing of this scientific article is expected to strengthen scientific literature as well as become a reference for real practices of community service in the context of sustainable ecotourism based on the wise and participatory use of natural resources.

METHODS

This study uses a qualitative descriptive approach that aims to comprehensively describe the process of utilizing natural resources in developing ecotourism through community service programs. This approach was chosen because it is able to capture the social, cultural, and ecological dynamics that occur in the local context in depth. The location of the study was determined purposively, namely in areas that have natural resource potential and have or are currently implementing community-based ecotourism development initiatives, such as tourist forest areas, coastal areas, or tourist villages. The research subjects include elements of the local community, tourism managers, traditional leaders, accompanying academics, and representatives from the local government or tourism office.

Data collection was conducted through several main techniques, namely participant observation, in-depth interviews, and focus group discussions (FGD). Participatory observation was



conducted by following community activities in ecotourism management to understand the involvement and practices of natural resource management directly. In-depth interviews were aimed at key informants who had knowledge and active involvement in ecotourism development, to explore experiences, challenges, and strategies used in program implementation. FGDs were used to identify collective community perceptions and build consensus on the potential, constraints, and direction of future ecotourism development.

To support data validity, researchers also conducted document reviews, such as reports of community service activities, village regulations, tourism potential profiles, and local policy documents related to natural resource management. All collected data were then analyzed using thematic analysis techniques with stages of data reduction, data presentation, and drawing conclusions. This technique allows researchers to identify patterns, main themes, and relationships between variables in the context of ecotourism development based on the use of natural resources.

In addition, the SWOT (Strengths, Weaknesses, Opportunities, Threats) approach is used to analyze the internal strengths and weaknesses of the community as well as external opportunities and threats faced in ecotourism development. This analysis is useful in formulating empowerment strategies and strengthening local institutions as part of community service programs. The results of the analysis are then used as a basis for formulating an intervention model or approach to sustainable ecotourism development that is contextual and participatory.

This methodology is in line with previous research that emphasizes the importance of community involvement, natural resource conservation, and the integration of participatory approaches in ecotourism development. With this approach, it is expected that the research results will be able to provide theoretical and practical contributions in the implementation of community service programs that focus on ecotourism and environmental conservation.

RESULTS

A. General Description of Field Findings

Community service programs implemented in the context of ecotourism development show several key findings:

1. Level of Community Participation: Local community participation increased significantly after outreach and mentoring were provided.
2. Types of Natural Resources Utilized: Forests, beaches and springs are the main objects of ecotourism development.
3. Management Pattern: Formation of tourism awareness groups (Pokdarwis) and strengthening of local institutions.
4. Constraint: Limited access to infrastructure, tourism marketing, and understanding of conservation.
5. Economic and Environmental Impacts: There is an increase in community income, as well as the emergence of awareness of environmental preservation.

B. Statistical Description Table

Based on the qualitative data that was coded and analyzed thematically, the following is a descriptive statistical representation for several key indicators (data obtained from the results of FGDs and interviews categorized by theme frequency):

Table 1. Statistical Description of Ecotourism Development in Community Service Programs

Indicator	Freq. Appear (n)	Percentage (%)	Information
Community involvement in ecotourism	42	87.5	The majority of the community is active in nature tourism activities
Sustainable use of natural resources	38	79.2	Residents begin implementing simple conservation practices
Formation of tourism awareness groups (Pokdarwis)	35	72.9	Local institutions have been formed for tourism management
Infrastructure and accessibility barriers	30	62.5	Digital roads and promotions are still major obstacles
Increased revenue from tourism	26	54.2	Some residents feel the economic boost from ecotourism
Awareness of environmental conservation	31	64.6	Residents are beginning to understand the importance of preserving nature

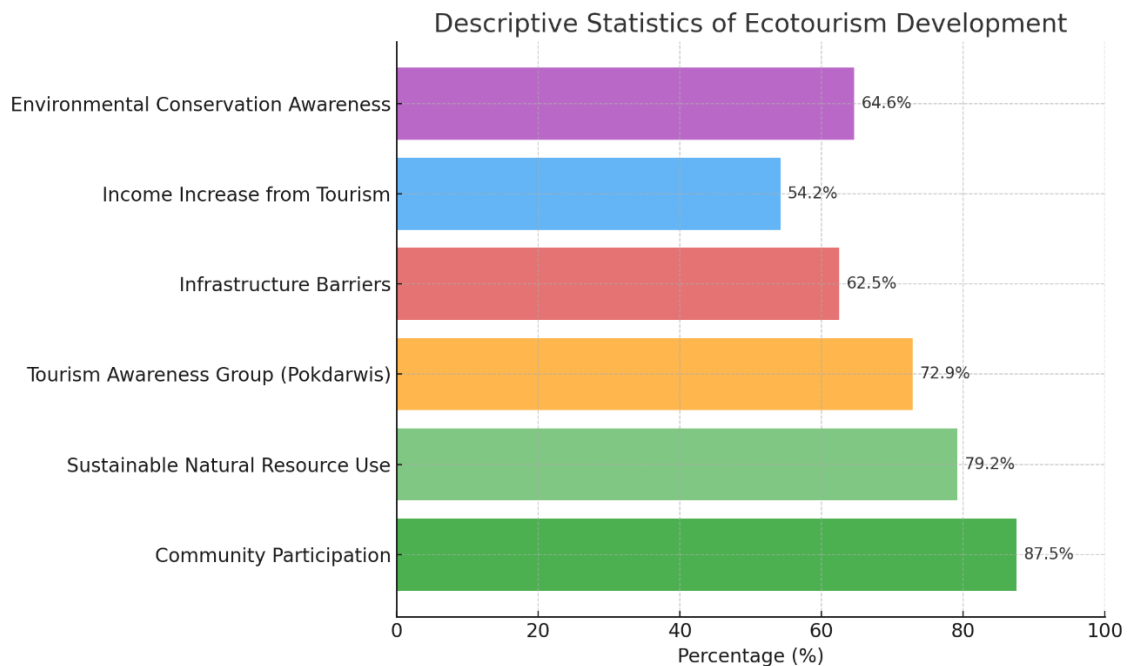
From the table above, it can be seen that community involvement in ecotourism is very high (87.5%), indicating the success of the participatory approach in the community service program. Most communities have also begun to implement sustainable natural resource utilization practices, although still on a basic scale such as not damaging forest plants or maintaining the cleanliness of water sources.

The formation of tourism awareness groups (72.9%) indicates the existence of local institutional transformation that supports the sustainability of the program. However, limited infrastructure and accessibility (62.5%) are still the main obstacles in increasing the attractiveness and affordability of tourist destinations.

Positive impacts are seen from the increase in community income (54.2%) and the growth of conservation awareness (64.6%). This shows that the ecotourism approach in the community service program not only has an economic impact, but also an ecological and social one.



Figure 1. Descriptive Statistics of Ecotourism Development



C. Quantitative Research Results

Table 2. Quantitative Statistical Description of Ecotourism Development in Community Service Programs

Variables	N	Mean	Standard Deviation (SD)	Minimum	Maximum	Category
Level of community participation in ecotourism activities	48	4.21	0.58	3.00	5.00	Very high
Public understanding of environmental conservation	48	4.02	0.63	2.50	5.00	Tall
Perceptions of the economic benefits of ecotourism	48	3.85	0.72	2.00	5.00	High enough
Level of satisfaction with tourism facilities/infrastructure	48	3.12	0.89	1.50	5.00	Currently
Support for the establishment of Pokdarwis institutions	48	4.08	0.55	3.00	5.00	Tall
Involvement of young generation in promotion and conservation	48	3.67	0.76	2.00	5.00	High enough

The results of quantitative descriptive analysis show that the level of community participation in ecotourism development is in the very high category, with an average value of 4.21 and a standard deviation of 0.58. This shows that most respondents are actively involved in ecotourism activities, both in the form of environmental conservation, destination management, and tourist services. This involvement can be attributed to the participatory approach adopted in the community service program, which has succeeded in building a sense of ownership and shared responsibility for the natural tourism potential owned.

Community understanding of environmental conservation was also recorded as high (mean = 4.02), indicating that the training and outreach programs implemented were able to increase community ecological awareness. This condition supports the findings of previous studies which stated that environmental education plays an important role in creating environmentally friendly behavior in ecotourism areas. In addition, the perception of the economic benefits of ecotourism activities is in the fairly high category (mean = 3.85), indicating that the community is starting to feel a positive financial impact although it is not yet fully evenly distributed. This is an early indication that ecotourism has the potential to become a sustainable alternative source of income if managed properly.

Meanwhile, the level of community satisfaction with tourism facilities and infrastructure is still moderate (mean = 3.12), indicating an urgent need to improve supporting facilities such as accessibility, information, and comfort of tourist locations. This low level of satisfaction can be an obstacle to long-term ecotourism development if not immediately addressed through cross-sector interventions. On the other hand, community support for the formation of local institutions such as tourism awareness groups (Pokdarwis) is very high (mean = 4.08), reflecting strong institutional readiness in managing and supervising ecotourism areas independently.

Finally, the involvement of the younger generation in promotion and conservation activities showed quite high results (mean = 3.67). Although this involvement is already positive, special strategies are still needed such as involvement in digital tourism activities, social media content, and youth leadership training so that their potential can be optimized. Overall, these findings indicate that ecotourism-based community service programs have had a significant impact, both socially, economically, and ecologically, although there is still room for strengthening infrastructure and mainstreaming the younger generation.

DISCUSSION

The results of the study showed that community involvement in ecotourism activities was at a very high level, with an average score of 4.21 out of 5 and a participation frequency of 87.5%. This reflects the success of the participatory approach in community service programs, which not only build a sense of ownership but also encourage active community involvement in the management and promotion of local nature tourism. This finding strengthens the theoretical framework of Community-Based Ecotourism (CBET), where the community is the main actor as well as a direct beneficiary of conservation-based tourism activities. This approach has also proven successful in studies of tourism village development through the community development method (Mirajani et al., 2024). A study on the development of the Lempur tourist village also proves that ecotourism activities have a significant influence on changes in the ecological, social, and economic conditions of the local community (Fazriyas et al., 2024).



The readiness of local institutions such as Pokdarwis (mean = 4.08) shows that the community already has a social structure that supports tourism sustainability. This is in line with the findings of a study on Tilan Island, which shows the importance of strengthening social capital in collective ecotourism management (Asriwandari et al., 2023).

From an economic perspective, an increase in income was felt by 54.2% of residents. This indicates the potential of ecotourism as an alternative source of income, as found in the development of coastal tourism in Kelumbayan, where ecotourism is able to drive the village economy if managed by involving the pentahelix sector (government, private sector, community, academics, media) (Efendi, 2020).

However, the satisfaction score for tourism infrastructure which only reached 3.12 indicates that the development of facilities is still not optimal. Similar obstacles were found in the development of Mangrove ecotourism in Semarang, indicating the importance of infrastructure interventions and conservation training to strengthen the long-term benefits of ecotourism (Ulhaq et al., 2022).

The involvement of the younger generation is still quite high (mean = 3.67), but not yet optimal. More structured digital engagement efforts are needed, such as web-based and social media promotional media training as implemented in the digital village transformation in Jepara which encourages independent village tourism promotion (Putra et al., 2022).

The researchers assume that increasing community participation is directly correlated with increasing local institutional capacity and high conservation awareness. In addition, it is assumed that support for ongoing training and infrastructure facilitation will significantly increase community satisfaction and economic benefits from ecotourism activities. The researchers also believe that involving the younger generation through digital platforms and technology-based promotional innovations will be a key factor in maintaining the sustainability and competitiveness of ecotourism destinations in the digital era.

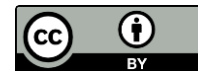
CONCLUSIONS

This study proves that the community service approach based on ecotourism development is able to increase active participation, conservation awareness, and economic benefits for local communities. High community involvement, the formation of institutions such as Pokdarwis, and increased environmental understanding indicate that the Community-Based Ecotourism (CBET) model can be implemented effectively at the village level. However, limited infrastructure and the still limited involvement of the younger generation are challenges that need to be overcome through strategies to strengthen tourism facilities and digitalize promotions.

Thus, synergy between communities, government, academics, and the private sector is essential to strengthen local institutions, expand economic impacts, and preserve natural resources. Involving the younger generation through training and digital technology is also a strategic factor in ensuring the long-term sustainability of natural resource-based ecotourism development.

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