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Variety of Livelihoods and Income of the Community Around the Bale Mangrove Ecotourism Site in Jerowaru Village, Jerowaru District, East Lombok Regency

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ABSTRACT

The purpose of this study was to analyze the variety of livelihoods and incomes of the community around the ecotourism area. The study used a qualitative approach with a descriptive method. Data were collected through observation, interviews, and questionnaires from 35 respondents consisting of traders, fishermen, managers, and photographers, who were selected purposively. The results showed that the existence of ecotourism has encouraged livelihood diversification from the fisheries sector to the tourism service sector. The trader group had the highest income level, followed by managers, fishermen, and photographers. These findings indicate that Bale Mangrove ecotourism has made a real contribution to improving the local community's economy. The conclusion of this study confirms that community-based ecotourism development can be an effective strategy in improving the welfare of coastal communities while supporting sustainable economic development

INTRODUCTION

Coastal and marine areas are centers of biological and non-biological natural resource wealth, with mangrove forest ecosystems being one of the most crucial global assets. Indonesia plays a vital role in global conservation, covering around 23% of the world's total mangrove forest area. Ecologically, mangrove forests play an important role in maintaining coastal balance and preventing erosion. However, these ecosystems also have significant socio-economic value, providing natural resources and environmental services directly to communities (Ndruru & Delita, 2021). Therefore, the development of ecotourism in mangrove areas is considered an optimal strategy to achieve a balance between nature conservation efforts and sustainable improvement of local welfare (Angela, 2023).

The province of West Nusa Tenggara, particularly East Lombok Regency, has great natural resource potential for the development of ecotourism. The destination that is the focus of this study is Bale Mangrove Ecotourism in Jerowaru Village, which is managed with a marine mangrove ecotourism concept by the local Tourism Awareness Group (Pokdarwis). This two-hectare area offers the unique feature of an ancient mangrove forest that is hundreds of years old. This attraction has triggered significant growth in visitor interest. Data shows that around 22,000 tourists visited in the last six months (September 2023 to February 2024), an indication of the high economic potential of Bale Mangrove as a source of income for the surrounding community (Putri *et al.,* 2024).

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With significant growth in the tourism sector, Bale Mangrove Ecotourism is expected to be a catalyst for optimizing natural potential to improve community welfare through sustainable economic activities (Septiana, 2018). The existence of this ecotourism has clearly given rise to various tourism activities that provide additional sources of income for local residents. However, comprehensive studies are still needed to map in detail the diversity of livelihoods that have emerged and to measure the actual income contributions that communities have gained from the direct impact of this ecotourism development. A deep understanding of these economic dynamics is crucial for evaluating the socio-economic impact and designing a more equitable and sustainable management model for the future.

Based on these conditions, the research questions in this study are: what are the livelihoods of the communities around Bale Mangrove Ecotourism, and what is the level of income that these communities earn from these activities? This study aims to identify the types of livelihoods of these communities and analyze their income around the ecotourism area. Overall, the results of this study have significant scientific and practical relevance. Academically, these findings are expected to serve as a primary reference for future literature and make a real contribution to expanding scientific knowledge, particularly regarding income analysis and livelihood dynamics arising from the development of community-based tourism. Practically, the empirical data generated can be used as a basis for managers (Pokdarwis) and local governments to formulate more effective management strategies, so that the economic benefits of Bale Mangrove can be optimally distributed and directly contribute to increasing the income and welfare of the local community.

METHODS

This research is a quantitative descriptive study, which aims to create a systematic, factual, and accurate description, depiction, or painting of the facts, characteristics, and relationships between the phenomena being investigated. The research was conducted at the Bale Mangrove Ecotourism Site, Jerowaru Village, Jerowaru District, East Lombok Regency. The research was conducted in July 2025.

The research subjects were all business actors around Bale Mangrove Ecotourism, totaling 35 respondents. The determination of respondents was carried out using a cluster sampling technique, which divided the subjects into four groups: 10 ecotourism managers, 10 fishermen, 11 traders/MSMEs, and 4 photographers. Data collection in the field was carried out through a combination of several techniques, including direct observation to observe the activities and socio-economic conditions of the community, open interviews with respondents using a questionnaire instrument, and literature studies to collect secondary data from various written references.

The data analysis technique used was qualitative descriptive analysis. This analysis aims to systematically describe and interpret field data to develop an understanding of the empirical findings. Specifically, the analysis was conducted to identify the various businesses of the community surrounding the ecotourism site and to analyze the income of the community affected by ecotourism. The income analysis uses the following formula:

$$I=TR-TC$$

Where:
I= Total income (Rp)
TR= Total (Rp)
TC= Total costs (Rp)

RESULTS AND DISCUSSION

1. Bale Mangrove Ecotourism Profile

History of Bale Mangrove Ecotourism

Bale Mangrove Ecotourism in Jerowaru Village, East Lombok, is the result of a significant transformation of mangrove land that had been degraded by illegal logging and the opening of fish ponds in the years prior to the mid-2010s. Driven by a critical awareness of the vital function of coastal ecosystems, conservation initiatives began with massive rehabilitation efforts that were later institutionalized through the formation of a Tourism Awareness Group (Pokdarwis). This group became the main driving force that successfully pioneered a new vision: preserving the environment while empowering the local economy through responsible tourism (Marlina & Firmansyah, 2025). In the late 2010s and early 2020s, the area transformed into a tourist destination with the construction of environmentally friendly infrastructure (such as footbridges and observation towers) and the active involvement of the community as guides and local producers. To date, Bale Mangrove Ecotourism continues to operate with increasing visitor numbers, contributing positively to community income. However, efforts to diversify businesses and anticipate risks such as climate change and fluctuations in the tourism market remain a priority to ensure the economic resilience of Jerowaru Village in the future (Hidayat, 2025).

2. Mangrove Management Organization

The success of the management and sustainability of Bale Mangrove Jerowaru Ecotourism centers on the key role of a community-based management organization, namely the Gili Mereng Tourism Awareness Group (Pokdarwis). This organization, which is fully owned and managed by local residents of Jerowaru Village, is fully responsible for all operational aspects, including facility maintenance, guiding, promotion, and financial management (Widri, 2023). This community-based management model has a dual role: ensuring that the economic benefits of tourism are distributed directly to the community that protects the environment, while also fostering a strong sense of ownership. This sense of ownership is the main foundation that has successfully transformed the community's paradigm from one that was initially exploitative to one that is conservative-productive, because the sustainability of the ecosystem directly guarantees the sustainability of their income sources.

3. Mangrove Area and Diversity

The Bale Mangrove Ecotourism Area is located on the coast of Jerowaru District, East Lombok, part

of a mangrove ecosystem estimated to cover a total area of 1,688 hectares (Erfayana & Pattaray, 2024), with a specific ecotourism management area covering 2 hectares. This area has a high diversity of mangrove species, dominated by the genus Rhizophora (especially R. mucronata and R. apiculata), and supported by species such as Sonneratia alba in the front zone and Avicennia marina with its distinctive root system. The presence of Bruguiera gymnorrhiza and Ceriops tagal further enriches the community structure at this location (Azwari *et al.,* 2023). Ecologically, this 2-hectare mangrove forest plays a vital role as a natural barrier protecting the coast from abrasion and tsunamis, as well as being an important habitat for various marine biota, supporting capture fisheries and the sustainability of local livelihoods through ecotourism.

4. Infrastructure

To support tourism and educational activities, Bale Mangrove Ecotourism has been equipped with adequate facilities and infrastructure. The main facility and distinctive feature of this destination is a wooden bridge (mangrove *tracking*) that provides access for tourists to explore the ecosystem directly without damaging the environment. Along the trail, lights and modern photo spots (including convex mirrors) have been installed, as well as gazebos or *berugaq* as rest areas. Other basic supporting facilities include a parking area, public toilets, simple food/drink stalls, and canoe rentals for water tours (Kasman *et al.,* 2022). The combination of comfortable and safe facilities, direct experiences in nature (such as exploring the forest and interacting with flora/fauna), and educational activitie about the mangrove ecosystem makes this destination highly sought after. Additionally, the affordable ticket prices help maintain the competitiveness and existence of Bale Mangrove Ecotourism compared to similar destinations in East Lombok.

Ficture 1. Facilities and Infrastructure

5. Information Access

Access to information about Bale Mangrove Jerowaru Ecotourism is managed through a combination of digital platforms and interpretive media on site. Digitally, the latest information is disseminated through the official social media accounts of the local Pokdarwis, particularly Instagram and TikTok, which are currently the fastest-growing platforms, especially among Gen Z (Septiana *et al.,* 2022). These social media platforms serve as visual galleries, practical information centers (operating hours, tickets), and reservation contacts. Meanwhile, on-site, information is reinforced through interpretive media such as information boards that explain the functions of the ecosystem and biodiversity. The role of local tour guides is crucial because they provide direct verbal information that includes contextual knowledge and local wisdom that is not available on digital platforms. This combination of communication strategies effectively supports the goals of community-based ecotourism. Access to Pokdarwis' official social media can be reached via the following link:

1.Facebook:
https://www.facebook.com/profile.php?id=100076359342420

2.Instagram:
https://www.instagram.com/balemangrove_jrw?igsh=MTdmbzFxYm92NXFwNQ==

3.Tiktok:
https://www.tiktok.com/@balemangrove_jrw?_t=ZS90gR0TdjtLw&_r1

Figure 2. Information Board

2. Characteristics of Responden

1. Age of Respondent

The results of the study show that all respondents, namely 100%, were in the productive age range, namely between 18 and 46 years or older. For more details, see table 2

Table 2. Age Distribution of Respondents in the Community Surrounding the Bale Mangrove Ecotourism Site in Jerowaru Subdistrict, in 2025

No	Age Range	Number	Percentage (%)
1	18-25	12	34,3
2	26-45	15	42,9
3	<46	8	22,9
Total		35	100

Source: Primary Data for 2025

Age is defined as the duration of a person's life since birth (Dewi & Perdhana, 2016). A person is considered to be of productive age if they have the capacity to produce goods or services (Goma, 2020). Based on the classification of the Central Statistics Agency (2021), the productive age range or workforce is between 15 and 64 years old. Individuals in this productive age range tend to have higher levels of physical fitness and labor productivity compared to older workers.

2. Respondents

The results showed that of the 35 respondents living around the Bale Mangrove ecotourism area in Jerowaru District, most of the workers were men (21), while the other 14 were women. The gender distribution of respondents is shown in Table 3

Table 3. Gender of Respondents around Bale Mangrove Ecotourism in Jerowaru District, 2025

Gender	Number of People	Percentage (%)
Famale	15	40
Male	20	60
Total	35	100

Source: Primary Data for 2025

Based on the results of the research, it shows that there are more men than women, namely 21 men (60%) and 15 women (40%). This difference shows a tendency for men to be more involved, which is driven by the fact that it is the duty of men as leaders and breadwinners of the family to work to earn money.

3. Education Level

The level of education is an important factor that influences employment alternatives and supports daily needs. The higher the level of education, the better the individual's mindset, so that they are quicker to accept and implement the science and technology they encounter, which ultimately correlates positively with increased productivity (Aprilyanti, 2017).

Table 4. Educational Level of the Community Around Bale Mangrove Ecotourism in Jerowaru District, 2025

No	Education Level	Number	Precentage (%)
1	Elementary	5	14.3
2	Junior High school	8	22.9
3	High school	19	54.3
4	college	3	8.6
	Total	35	100

Source: Primary Data for 2025

Based on Table 4, the highest level of education among residents was recorded as 19 people or 54.3% from senior high school, while the lowest was 3 people or 8.6% from higher education. The results of this study show that the highest level of education among respondents was mostly at a low level, namely senior high school, which could have an impact on the way they think and make decisions in ecotourism management.

4. Respondents' Occupations

Bale Mangrove Ecotourism in Jerowaru District is an environmentally based destination that serves a dual purpose as a conservation area and a driver of the local economy. Its existence directly creates various employment opportunities that support community welfare and environmental sustainability. The employment structure that has emerged in this area reflects a combination of traditional professions that have been passed down from generation to generation, such as fishermen and traders, with the emergence of new professions in line with the development of tourism. These new professions include photographers, tour guides, ticket clerks, and cleaning staff who support tourism services. In addition, there are also managerial and administrative roles carried out by the chairperson, treasurer, and field coordinator, which are important for the smooth operation of ecotourism. This transformation shows the diversification of livelihoods as a direct impact of ecotourism development. This can be seen in Table 5

Table 5. Various Types of Work in the Community Around Bale Mangrove Ecotourism, Jerowaru Subdistrict

No	Type of Work	Number	Percentage (%)
1	Merchant	11	28.6
2	Fisherman Evo-tourism	10	28.6
3	Managers	10	28.6
4	Photografer	4	14.2
	Total	35	100

Source: Primary Data for 2025

Table shows the diversity of occupations in the Bale Mangrove Ecotourism area, Jerowaru Subdistrict. Of the total 35 respondents, the most dominant occupations were traders and fishermen, each numbering 10 people or 28.6%. This dominance indicates that most of the community around the ecotourism site still depends on small-scale trade and marine activities, which are the backbone of the local economy. Overall, the distribution of occupations shows that although the economic structure is still dominated by the primary (fishermen) and secondary (traders) sectors, this area is beginning to show significant links to the tourism service sector, such as photographers, tour guides, and ticket booth attendants. This confirms that the existence of ecotourism has had a positive impact on diversification and the creation of new livelihoods for the community.

3. Income Analysis

1. Type of Business

The livelihood structure in Bale Mangrove Ecotourism is dominated by four groups: Traders (11 people), Fishermen (10 people), Bale Mangrove Managers (10 people), and Photographers (4 people). Traders are local people who sell simple food and drinks at semi-permanent stalls in the tourist area, with relatively affordable initial capital (IDR 1,000,000–IDR 3,000,000). Fishermen are traditional small-scale fishermen who depend on marine resources in Seriwe Bay, with highly fluctuating incomes. The managers are members of the Pokdarwis who are responsible for all operations and conservation, receiving wages based on a salary system. Photographers provide photography services, generally working on weekends at a rate of IDR 2,000 per photo.

2. Costs

The monthly operating costs incurred by respondents are an important factor in determining business profitability and vary significantly between livelihood groups. The Trader group bears the highest operational costs, reaching a total of IDR 91,600,000 per month, or an average of IDR 8,327,273 per person, most of which is allocated for daily trading raw materials, reflecting the intensive scale of transactions. Meanwhile, the Managers' costs were recorded at IDR 11,900,000, which was the monthly salary allocation for Pokdarwis members and internal operational costs. The Fishermen's operational costs were relatively small (an average of IDR 235,200 per person), but they were crucial and vulnerable to fluctuations in the prices of boat fuel and ice blocks. Finally, the Photographer's costs are the most minimal, only IDR 800,000 per month, used for transportation and equipment maintenance. These differences indicate that the trade sector has intensive daily capital requirements, while the Fishermen sector is highly sensitive to changes in primary input prices.

3. Revenue

Gross monthly income was calculated by adding up the total income earned by all respondents in a particular occupation group, then dividing it by the number of respondents to obtain the average.

Table 6. Respondents' Revenue

No	Occupation	Description of Income Variety	Average of Revenue (Rp/person/month)
1	Merchant	Selling heavy and light meals, beverages,	16.364.000
2	Fisherman Evo-tourism	Catching sea fish and squid	1.600.000
3	Managers	Selling photography services	1.400.000
4	Photografer	Managing tourist attractions, cleaning services, tourist tickets	3.000.000

Source: Primary Data for 2025

The average gross income per individual in the ecotourism sector shows significant disparities. The Trader group dominates with the highest average gross income, reaching IDR 16,364,000 per person per month, indicating that the commercial sector is capable of providing enormous economic opportunities in this region. In contrast to traders, the Fishermen group only recorded an average of IDR 1,600,000 per person per month, which shows a much smaller economic contribution and is closely related to limited catches and seasonal conditions. Meanwhile, the gross income of managers from ticket sales reached IDR 30,000,000 per month, with IDR 18,100,000 remaining after operational costs were allocated. Photographers had the lowest average gross income, namely IDR 1,400,000 per person per month, influenced by limited demand for services due to competition with tourists' personal cameras.

4. Net Income

Net income is calculated by subtracting each group's total gross income from their operating expenses for one month.

Table 7. Respondents' Net Income

No	Occupation	Gross Income (Rp/month)	Expenses (Rp/month)	Net Income (Rp/month)	Net Income (Rp/person/month)
1	Merchant	180.000.000	91.600.000	88.400.000	8.000.000
2	Fishermen	16.000.000	2.352.000	13.648.000	1.368.400
3	Managers	30.000.000	11.900.000	18.100.000	1.810.000
4	Photografer	5.600.000	800.000	4.800.000	1.200.000
	Total				12.378.400
	Average				3.094.600

Source: Primary Data for 2025

Net income is calculated by subtracting gross income from operational costs incurred by each livelihood group, which are influenced by the type of business, tourist visitation rates, and production capacity (Satria, 2017). Collectively, the average net income of all respondents (traders, fishermen, managers, photographers) reached IDR 3,094,600 per person per month. This figure exceeds the Regional Minimum Wage (UMR) for the area, confirming the real economic contribution of Bale Mangrove Ecotourism to the surrounding community (BPS, 2024). However, the analysis shows a significant income gap: the Merchant group enjoys the highest income level of Rp 8,000,000 per month, which is more than three times the UMR, driven by the high demand for stable and daily food and beverage products. In contrast, the Fishermen (IDR 1,368,400), Managers (IDR 1,810,000), and Photographers (IDR 1,200,000) groups have incomes below the RMI. The low income of Fishermen is influenced by weather factors, fishing seasons, and high operational costs (Fauzi & Anna, 2020), while the Managers and Photographers groups are influenced by fluctuations in service demand. This gap shows that the distribution of economic benefits from ecotourism is not yet evenly distributed. However, the Management group demonstrates strong financial management by allocating 60% of its surplus funds to reserve savings and development. This sustainability strategy demonstrates economic resilience, which is important for maintaining the stability of tourism activities and community income in the long term (Rahmawati & Rachman, 2024).

CONCLUSION

Bale Mangrove Ecotourism has successfully triggered a transformation in the livelihoods of the Jerowaru Village community from the traditional sector (fishermen) to the tourism-based service sector (traders, managers, photographers). These various businesses are divided into four main groups, indicating the opening up of broader economic opportunities. Financially, ecotourism serves as a driving force for the local economy, as evidenced by the total collective net income of the community involved, which reaches IDR 29,737,000 per month. However, there is a significant disparity in income; the Merchant group earns the highest net income (IDR 88,400,000 per month), far exceeding the Manager group (IDR 18,100,000), Fishermen (IDR 13,648,000), and Photographers (IDR 4,800,000), indicating that the distribution of economic benefits is not yet fully equitable.

REFERENCES

Angela, vivi F. (2023). Strategi Pengembangan Ekowisata dalam Mendukung Konservasi Alam Danau Tahai. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, *8*(3), 984–993.

Aprilyanti, S. (2017). Pengaruh Usia dan Masa Kerja Terhadap Produktivitas Kerja (Studi Kasus: PT. OASIS Water International Cabang Palembang). *Jurnal Sistem dan Manajemen Industri*, *1*(2), 68. https://doi.org/10.30656/jsmi.v1i2.413

Azwari, L. R., Faturrahim, & Yulendra, L. (2023). *Strategi Pengembangan Ekowisata Mangrove Destinasi Wisata Bale Mangrove Dengan Analisis SWOT Di Dusun Poton Bako Desa Jerowaru Kecamatan Jerowaru Kabupaten Lombok Timur*. *3*(2), 725–736.

Dewi, A. S., & Perdhana, M. S. (2016). Analisis Indeks Pembangunan Manusia (IPM) di Provinsi Jawa Barat Tahun 2010-2014. *Jurnal Ekonomi Pembangunan (JEP)*, *Vol.17*, 145–156.

Erfayana, M., & Pattaray, A. (2024). *Inovasi Program Tur Ekowisata Bale Mangrove sebagai Daya Tarik Wisata Berkelanjutan di Desa Wisata Jerowaru Kabupaten Lombok Timur*. *4*(2), 465–474.

Goma, S. (2020). Produktivitas Kerja dan Faktor-faktor yang Mempengaruhinya (Studi Kasus pada Pekerja di Sektor Industri). *Jurnal Ilmu Ekonomi, Jurnal Manajemen*.

Hidayat, A. (2025). Strategi Komunikasi dan Keterlibatan Masyarakat dalam Konservasi Mangrove di Jerowaru, Lombok Timur. *Journal of Community Development and Empowerment*, *1*(3), 66–71. https://doi.org/10.70716/jocdem.v1i3.184

Kasman, K.-, Tudikromo, F. H., & Arifin, T.-. (2022). Pengembangan Ekowisata Mangrove di Pantai Sesar Lama, Kecamatan Bula. *Jurnal Kelautan Nasional*, *17*(3), 221. https://doi.org/10.15578/jkn.v17i3.11519

Ndruru, E. N., & Delita, F. (2021). Jurnal Hutan Lestari. *Hutan Lestari*, *1*, 1–19.

Putri, Z. S., Webliana, K., & Wulandari, F. T. (2024). *Pengaruh Temprature Humidity Index (THI) dan Persepsi Wisatawan Terhadap Minat Berkunjung Di Kawasan Ekowisata Bale Mangrove, Desa Jerowaru Kabupaten Lombok Timur (Influence of Temperature Humidity Index (THI) and Visitor Perception on Visiting Inte*. *19*(2), 382–394.

Rahmawati, & Rachman, I. N. A. (2024). *Persepsi dan Sikap Masyarakat Terhadap Pengembangan Ekowisata Bale Mangrove di Desa Jerowaru, Kecamataan Jerowaru Kabupaten Lombok Timur*. *7*(1), 54–64.

Septiana, E., Dayanti, G. S., Lestari, A. P., Salsa, B., Saputri, A., & Ariyanti, M. (2022). *Sosialisasi Pengembangan Ekowisata Bale Mangrove Di Dusun Poton Bako Sebagai Upaya Peningkatan Ekonomi Masyarakat Di Desa Jerowaru Kabupaten Lombok Timur*. *3*(4), 593–599.

Septiana. (2018). Pengelolaan Ekowisata Dalam Meningkatkan Minat Kunjungan Wisatawan (Studi Kasus Di Bale Mangrove Jerowaru, Kabupaten Lombok Timur). *Angewandte Chemie International Edition, 6(11), 951–952.*,

3(1), 10–27.

Widri, H. Al. (2023). Peran Kelompok Sadar Wisata (POKDARWIS) Dalam Pengembangan Ekowisata Bale Mangrove di Desa Jerowaru Kecamatan Jerowaru Kabupaten Lombok Timur. *Nucl. Phys.*, *13*(1), 104–116.