

A Synergy Model for Sustainable Tourism and the Blue Economy in the Coastal Area of East Lombok Regency

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Abstract

This study aims to formulate a synergy model between sustainable tourism and the blue economy in the coastal areas of East Lombok Regency. The background of this research is based on the great potential of coastal areas that are rich in marine resources but still face environmental degradation, low community welfare, and the suboptimal utilization of marine potential. The research method uses a descriptive qualitative approach with data collection techniques through literature studies, field observations, and interviews with stakeholders, including local government, tourism actors, coastal communities, and academics. Data were analyzed by adapting the Indonesian Ocean Health Index (IKLI) and Ocean Health Index (OHI), as well as SWOT analysis to identify opportunities, challenges, strengths, and weaknesses in the development of blue economy-based tourism. The results show that East Lombok coastal tourism has great potential through marine tourism, ecotourism, fisheries, and salt farming. However, the implementation of the blue economy concept is still not optimal due to limited infrastructure, institutional capacity, and coordination among stakeholders. The proposed synergy model emphasizes integration between environmental conservation, local community empowerment, and sustainable policy support. This research contributes to strengthening the literature on coastal development and serves as a reference for sustainable tourism policy development in East Lombok.

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1. INTRODUCTION

The wealth of marine waters has great potential in improving the development and economy of the Indonesian people (Sukuryadi & Ali, 2018). Indonesia has a coastline of 81,000 km, the second longest in the world after Canada (81,000 km) (Donesia et al., 2023a). The country's wealth needs to be managed to provide greater benefits for the welfare of society. One of the country's assets that can be utilized is tourism in coastal areas. Coastal tourism is optimized by emphasizing the concept of sustainability. Successful achievement of sustainable development will have an impact on the improvement of the tourism sector (Bahri et al., 2023).

The sustainable tourism sector in coastal areas has the potential to boost regional economic growth. Sustainable tourism can be an economic driver for coastal areas, creating new jobs, increasing income, and diversifying the local economy. This can improve the quality of life for local communities and reduce poverty (Kamariani et al., 2024). This is especially true in the coastal areas of East Lombok if properly managed in accordance with

the potential of each region based on its environmental parameters (Adinugroho, 2017; Rifan A.A., & Irawati, 2020; Setijawan, 2018). Tourism activities are also a solution to improving community welfare. One of East Lombok's tourism potentials comes from the maritime sector, which is an activity that utilizes potential at sea and on land (Masjhoer, 2020). Therefore, there is a need for synergy between sustainable tourism and economic growth in the marine and aquatic sectors, known as the Blue Economy. (*Blue Economy*). *Blue economy* is an approach to improving sustainable marine management and conservation of marine and coastal resources and their ecosystems in order to realize economic growth with principles including community involvement, data source efficiency, minimizing waste and double added value.

The rich potential of coastal areas does not translate directly to the well-being of their communities. This is also true in the coastal areas of East Lombok Regency. The East Lombok coastline boasts abundant resources but is highly vulnerable to damage if sustainable management principles are not adhered to. Tourism activities in coastal areas still face various environmental problems such as abrasion (BPBD, 2024) Waste pollution (*Department of Environment and Forestry*, 2024) mangrove forests are starting to become extinct and coral reefs are being damaged (*Government tourism office*, 2024). One concept that can be applied to address these issues is the Blue Economy. The sustainable use of marine resources to improve community welfare by optimizing sustainable tourism (Airawati et al., 2023). The goal is to ensure tourism provides economic benefits without damaging the environment or local culture. In the context of marine tourism, this means promoting marine tourism that is not only profitable but also maintains the sustainability of marine ecosystems. Sustainable tourism and the blue economy support each other to create a synergistic model for managing marine resources that is more environmentally, socially, and economically friendly, providing long-term benefits for the community and the environment. Therefore, as an effort to find a solution to this problem, the author compiled a research title “Synergy Model of Sustainable Tourism and Blue Economy: A case study of leading tourism in the coastal area of East Lombok Regency”. How is the synergy model of sustainable tourism and blue economy in leading tourism in the coastal area of East Lombok Regency.

The problem-solving approach in this research relies on the integration of analysis between the concepts of sustainable tourism and the blue economy in the context of coastal area management. The first step is to conduct an initial mapping of the existing conditions of the superior coastal areas in East Lombok Regency covering economic, social and environmental aspects using field observation methods, in-depth interviews with stakeholders, and documentation reviews from related stakeholders. The second step is to analyze the principles of the blue economy in the region using the Indonesian Marine Health Index (IKLI) and Ocean Health Index (OHI) indicators to measure the extent of coastal activities. Next, a SWOT analysis is conducted to identify internal and external factors that influence the potential synergy between sustainable tourism and the blue economy. The results are then used to develop a conceptual model of synergy that brings together social, economic and ecological interests in a balanced manner.

The problem-solving strategy emphasizes the importance of a participatory and transdisciplinary approach, involving local governments, tourism stakeholders, local communities, and academics in the model formulation and validation process. The final outcome is expected to be a coastal development model based on sustainable principles and a blue economy that can be replicated in other coastal areas.

This research is based on the understanding that coastal areas hold a strategic position in driving national economic growth and improving the welfare of local communities, particularly through the tourism and maritime sectors. Several previous studies have

emphasized the importance of developing sustainable tourism as a means of more prudently managing natural resources (Bahri et al., 2023; Masjhoer, 2020). Meanwhile, the blue economy concept has also begun to be widely applied in coastal development policies because it combines environmental conservation efforts with increasing economic value (Airawati et al., 2023; Tegar, D & Saut Gurning, 2018). However, most existing research tends to discuss these two approaches separately. Studies on the blue economy generally focus more on sectors such as fisheries, marine energy, or ports (Airawati et al., 2023; Halpern, 2020a; Nguyen et al., 2022). On the other hand, studies on sustainable tourism often emphasize tourism destination management and community involvement (Sotiriadis & Shen, 2020). Not many studies have attempted to integrate the two into a coherent and applicable framework, especially based on local case studies.

This research offers a number of new contributions that aim to fill gaps in the existing literature; [1] Integrative Model: Combining the concepts of sustainable tourism and blue economy in one strategic framework, [2] Empirical-Conceptual Approach: Using literature studies and field data from observations and interviews in East Lombok, [3] Adaptation of Marine Health Indicators: Adapting IKLI and OHI to local conditions to analyze the sustainability of coastal activities, [4] Contextual SWOT Analysis: Considering local ecosystems and cultures in formulating coastal development strategies. With this approach, this research is expected to provide theoretical contributions in the development of sustainable coastal development concepts, as well as being a practical reference for the formulation of regional development policies, especially in coastal areas such as East Lombok.

2. RESEARCH METHOD

This type of research is qualitative with descriptive analysis. Qualitative research as a research procedure that produces descriptive data in the form of written or spoken words from people and observed behavior from the phenomena that occur (Meleong, 2007). Then Meleong (Meleong, 2007) stated that descriptive research emphasizes data in the form of words, images, and not numbers due to the application of qualitative methods. The approaches used are sociological, historical, and pedagogical approaches. The instruments used are keyword instruments developed by the researcher, in the form of documentation, field findings through interviews, and observations. Data collection from these field findings was carried out related to analyzing several models, research methodologies, and theoretical foundations for the concept of sustainable tourism and the application of the Blue Economy in Coastal Area Development in East Lombok Regency. Then after the data collection was carried out, the data was then articulated which was shown in the facts referring to the research title, so that based on this, several facts would be formed that would produce new knowledge. Data analysis was carried out through inductive and deductive means to draw conclusions from the research. The research subjects in this study used a purposive sampling technique with the informant determination technique using key informants. The key informants in the study are as follows: 1). Head of the East Lombok Regency Tourism Office; 2). Head of the East Lombok Regency Tourism Development Division; 3). Head of the East Lombok Regency Fisheries and Maritime Affairs Office; 4). Coastal Communities of East Lombok Regency who are willing to be informants and in accordance with the provisions and needs of the research.

3. RESEARCH RESULTS AND DISCUSSION

3.1 Existing conditions of tourism in East Lombok Regency

The coastal areas of East Lombok Regency have significant potential if properly developed. These potentials include fisheries, coral reef cultivation, mangroves, salt

farming, and tourism. Capture fisheries production is projected to reach 21,328,000 tons in 2024, but utilization is only 2% (BPS East Lombok Regency, 2025). Only a small portion can be utilized by the community, with the dominant fish commodities being tuna, skipjack tuna, layah, and cakalang.

Coral reefs in the coastal areas of East Lombok are still considered quite good, with 65% in healthy condition and around 35% damaged, either in the form of dead coral, coral fractures, or due to human activities. This figure indicates the need for more attention to conservation efforts to prevent more extensive damage in the future. Coral reef damage is inseparable from the impact of climate change, especially the increase in sea water temperatures that disrupt the balance of the underwater ecosystem. In addition, human activities such as environmentally unfriendly fishing such as the use of explosives, toxic chemicals and fishing gear that are not environmentally friendly (Ginting, 2023) as well as uncontrolled tourism activities also exacerbate the condition. The need for education and restrictions on activities around coral areas is a strategic step to save marine biodiversity. In efforts to maintain coral reefs in good condition, collaboration is carried out between coastal communities and village governments regarding the importance of maintaining marine ecosystems, conducting education between residents, not throwing garbage into the sea and activities that damage coral reefs, such as mooring boats on coral.

Coastal areas East Lombok Regency has the largest mangrove area among the regencies on Lombok Island. However, approximately 1,600 hectares, or 50%, are damaged. Mangrove forest destruction can negatively impact the environment, marine life, and the economy of coastal communities (Wahana Visi Indonesia, 2025). The growth of mangrove forests in East Lombok Regency experiences a number of obstacles due to natural factors, including sea waves, strong winds, unhealthy seeds used, and a lack of compatibility between the seeds and the environment. Planting has resulted in many mangrove seedlings failing to grow (Rahman et al., 2022). To repair this damage, the government is carrying out mangrove rehabilitation. This is considered a concrete step in coastal ecosystem restoration. Although still in the recovery stage, its impacts are beginning to be seen, particularly in maintaining ecosystem balance and improving ecological environmental quality. This effort is an important foundation for promoting environmental sustainability and strengthening coastal resilience to climate change. The area of mangrove forest in East Lombok Regency is 61,537.38 thousand hectares.

Salt production has increased significantly over the past three years, reaching 1,103.21 tons in 2022, increasing to 2,364.72 tons in 2023, and continuing to increase to 4,725.33 tons in 2024. East Lombok Regency is a key player in national salt production due to its relatively extensive salt farming potential spread across Lombok and Sumbawa Islands. This salt farming sector is quite important and offers potential for development, as salt is a basic human need, while the population requiring salt is very large (Khotmi et al., 2022).

East Lombok Regency's leading coastal tourism destinations are divided into three zones: the South Zone in Jerowaru, the Central Zone in Labuhan Haji, and the East Zone in Sambelia. East Lombok Regency's leading coastal tourism destinations have distinct attractions: the South Zone with its beautiful waves, the Central Zone with its culinary delights, and the East Zone with its underwater charm. Despite the immense potential of each leading zone, development challenges arise, including infrastructure, facilities, human resources, and institutions. Coastal development is not just about natural beauty and tourist visits. Basic infrastructure such as drainage, sanitation, and waste management is crucial and cannot be ignored. The community views these

improvements as a clear indicator of the government's commitment to environmental quality and public health. Improvements to the drainage system at leading coastal tourism destinations generally demonstrate improvements. Waste management, a key challenge in tourism areas, has also begun, although it is still in its early stages.

The 2024-2028 Regional Tourism Development Master Plan (RIPARDA) explains that tourism development in East Lombok Regency is divided into three zones, namely *mass tourism*, *Green Tourism*, dan *Blue Tourism*. in the superior coastal tourism is included in *zona Blue Tourism* is a new concept in marine and fisheries development that is believed to increase marine economic growth, employment, environmental protection, and poverty alleviation (Donesia et al., 2023). Tourism development in the East Lombok Regency, particularly the coastal areas, has just begun to be reorganized. However, to date, it remains relatively stagnant. Despite comprehensive development, significant progress has not yet been shown, such as increased tourist visits and inclusive coastal economic growth. However, facilities are considered adequate. Therefore, the government continues to strive to encourage coastal economic growth through the tourism sector through various concrete steps, including appropriate regulations, increased budgets for coastal tourism destination development, and other human resource development activities.

The economic conditions of the coastal areas of East Lombok Regency are largely underdeveloped. According to statistical data, there are still 189,640 people, down 1.200 people compared to 2021. The poverty rate is 15.14%, down 0.24% from the poverty line of 31.22% (BPS East Lombok Regency, 2025). East Lombok Regency ranks first in West Nusa Tenggara Province. This also makes East Lombok the highest contributor to poverty in West Nusa Tenggara Province, considering its population is also the largest in West Nusa Tenggara. Therefore, optimal utilization of potential, especially in the maritime and tourism sectors, is needed to improve community welfare.

Developing coastal areas through the marine and tourism sectors is a great opportunity to provide prosperity for local communities. Coastal tourism development not only beautifies coastal areas but also brings new hope. One tangible impact is the creation of increasingly diverse job opportunities. Communities that previously relied on marine or agricultural products are now beginning to experience the economic benefits of the tourism sector. Utilizing the tourism sector can boost economic growth and reduce poverty (Kamariani, 2025). For example, small stalls are opening, boat rental services are emerging, and local food vendors are attracting tourists. Activities such as trading and renting out facilities provide new sources of income that can improve community welfare.

Coastal development can ensure the sustainability of marine ecosystems. In this regard, the government has established a strategic policy. One concrete example is the formation of tourism awareness groups (Pokdarwis). Pokdawis plays an active role in providing education and monitoring tourism activities to ensure they remain environmentally friendly. Furthermore, tourism posts have been established to serve as information centers, monitoring, and controlling tourism activities in each tourist village to prevent damage to conservation areas, such as coral reefs, mangroves, and other marine ecosystems. This policy represents a concrete step in integrating environmental conservation with the sustainable development of the coastal tourism sector.

To create sustainable coastal tourism development, the government is building strong synergies by actively engaging the community. One concrete effort is to encourage the community to be directly involved in various tourism activities, from

planning and management to destination promotion. This community involvement not only strengthens a sense of ownership of local potential but also opens economic opportunities and fosters collective awareness of the importance of preserving the coastal environment. With solid collaboration between the community, government, and other stakeholders, tourism development becomes more inclusive, effective, and has a direct impact on shared prosperity (Bahri, 2022).

However, to date, coastal tourism development has not received support from external parties or investors. This means that investor involvement remains a barrier to accelerating tourism sector development, particularly in terms of management, promotion, and provision of supporting facilities for tourist destinations. Support from external parties or investors is highly anticipated to ensure optimal development of local tourist destinations and positively impact the local economy.

However, community involvement or participation in coastal tourism development is highly significant. More intensive collaboration will achieve sustainable tourism for the well-being of local communities, safeguard environmental sustainability, and preserve cultural heritage (Kamariani, 2025). Community involvement is not only a key driver of successful tourism programs but also a vanguard in efforts to protect marine ecosystems with active community involvement, sustainable tourism is no longer just a discourse, but a reality that is built together. Future coastal development in East Lombok Regency will undoubtedly increase, potentially putting pressure on the environment. The push for a Blue Economy will undoubtedly also increase.

3.2 Potential for developing a blue economy in the East Lombok Coastal Region

Indonesia is the largest archipelago country in the world which has the potential to become the world's maritime axis (Donesia et al., 2023b). Therefore, since 2016, the development of the blue economy has been proposed as a solution to address the problems and challenges facing Indonesia's maritime sector. Indonesia's blue economy has a potential value of \$1,334 billion, equivalent to Rp19,371 trillion. (BAPPENAS, 2021). To that end, the Ministry of National Development Planning/National Development Planning Agency (BAPPENAS) and the Organization for Economic Cooperation and Development (OECD) have formulated a Blue Economy Development Framework for Indonesia's Economic Transformation. (BAPPENAS, 2021) This framework emphasizes Indonesia's inclusive economic growth and is envisioned as a key step in the economic transformation of the 2025-2045 National Long-Term Plan.

To realize Indonesia as a sovereign, advanced, and resilient archipelagic nation, the blue economy is a national priority integrated into the initial draft of the 2025-2029 National Medium-Term Development Plan (RPJMN) and has been integrated at the regional government level. This initiative is expected to promote national independence through down streaming and industrialization, increasing the added value of local raw materials and alleviating poverty in the maritime sector.

The implementation of BE requires a Framework which contains indicators of ocean health. Essentially, the BE Concept is a lens for viewing and developing a policy agenda that simultaneously improves ocean health and economic growth.

Ocean Health Index (OHI) Is a framework to assess marine health based on the provision of sustainable benefits and services to communities such as food, cultural and social values, and jobs (Halpern, 2020). This worksheet serves as a guideline for assessing the Indonesian Marine Health Index (IKLI) published by the Coordinating Ministry for Maritime Affairs and Investment in 2020. The indicators used in this study include: the sea as a provider of tourism and recreation services; coastal protection; the

sea as a source of livelihood and economic activity; clean waters; and the sea as a source of natural products.

The ocean is a source of life, providing a variety of commodities and services essential to human well-being. Healthy oceans are a vital asset for the sustainability and well-being of communities. However, of all the industrial sectors within the blue economy, Indonesia has yet to fully develop renewable energy, bioeconomy, and biotechnology. Meanwhile, developing the blue economy faces challenges, such as the dwindling fisheries sector, which is known to have fish resources due to overfishing (Nasution, 2022).

The blue economy is a sustainable marine economy that generates economic and social benefits that ensure environmental sustainability that can be utilized in the long term (Rahim et al., 2024). The principles of the blue economy have begun to grow and develop among the coastal communities of East Lombok Regency. Although the term is not yet familiar to most residents, the practice is already underway. For example, the utilization of marine products by fishermen to be processed into products with sales value. This proves that the spirit of protecting the sea while improving the economy has become part of the community's daily life, even though they are not aware that they have been implementing the principles of the blue economy in real terms.

The coastal areas of East Lombok Regency hold strategic and competitive tourism potential, both in the context of ecotourism, maritime tourism, and local culture. Stretches of white sandy beaches, clusters of islands, and preserved mangrove ecosystems make this area a unique natural attraction and high ecological value. Prime destinations such as Gili Sulat, Gili Lawing, Bukit Kayangan, Kayangan Sunrise, Suryawangi Beach, Ekas Bay, Cemara Beach, Surga Beach, Tanjung Ringgit Beach, and others offer unique landscapes while supporting marine tourism activities such as snorkeling, diving, and environmental education. Furthermore, the presence of coastal communities with maritime traditions, fishing activities, and artisanal salt production strengthens the basis of community-based tourism. The synergy between natural resource potential and local wisdom demonstrates that coastal tourism development in East Lombok has significant prospects for driving regional economic growth, provided management is carried out through principles of sustainability and multi-stakeholder collaboration and needs to be supported by adequate infrastructure. The potential and beauty of tourist attractions are attractive factors in increasing the number of local and international tourists. Based on data from the East Lombok Regency Tourism Office, the number of domestic tourist visits in the last three years has shown a significant upward trend, reaching 71,301,000 in 2022, increasing to 78,230,000 in 2023, and then soaring again to 100,547,000 in 2024. Although the pandemic had crippled tourism activity, East Lombok Regency has successfully capitalized on the recovery momentum to enhance destination appeal and strengthen the tourism sector's contribution to the GRDP, as evidenced by consecutive increases in 2022 (263.31%), 2023 (292.03%), and 2024 (318.46%). This phenomenon of increasing visits and GRDP in the tourism sector is interesting to analyze, considering that the region previously faced challenges from the pandemic and limited supporting tourism infrastructure. This increase in tourist visits can be explained by several key factors. First, there has been a shift in tourist preferences post-pandemic, with destinations based on open nature, local culture, and ecotourism becoming the primary choice because they are considered safer and provide authentic experiences. East Lombok, with its coastal tourism, Mount Rinjani, and tourist villages, has successfully met this need. Second, the active role of local communities in developing community-based tourism. (*community-based tourism*) contributes to increasing the destination's attractiveness. Through the involvement of

tourism awareness groups (Pokdarwis) and MSMEs, tourists gain firsthand experience in cultural activities, culinary delights, and local crafts, strengthening East Lombok's image as a unique destination. Third, digital promotional support and improved transportation connectivity are also driving factors. Although physical infrastructure remains limited, the use of social media, online platforms, and tourism promotion networks can expand the reach of information and encourage tourists to visit. Furthermore, the relatively close proximity of Lombok International Airport facilitates access for domestic and international tourists to East Lombok. Fourth, the multiplier effect of regional and national tourism events such as the Mandalika MotoGP, cultural festivals, and local attractions also drives tourist flow to East Lombok as a supporting destination. This has a positive impact on increasing the number of visits despite the infrastructure being inadequate. Therefore, it can be concluded that the increase in the number of domestic tourists in East Lombok Regency in the 2022–2024 period is not only influenced by external factors such as post-pandemic recovery, but also the result of community-based destination strengthening strategies, effective digital promotion, and synergy between the government, business actors, and the local community. These factors are what make East Lombok remain competitive as a tourist destination, even though it still faces infrastructure limitations.

Efforts to develop coastal tourism potential continue to be undertaken by various parties, particularly the East Lombok Regency Government. This policy direction for coastal tourism destination development is outlined in the East Lombok Regency Tourism Development Master Plan, which serves as a basic guideline for guiding the management, development, and utilization of tourism potential sustainably. The document emphasizes not only increasing destination attractiveness but also environmental sustainability, empowering local communities, and strengthening tourism institutions. Furthermore, coastal tourism development in East Lombok is implemented through multi-stakeholder collaboration involving local governments, businesses, local communities, tourism awareness groups (Pokdarwis), academics, and the media. This synergy is realized in the form of joint program development, community-based tourism product development, and more targeted promotion. With this cross-sector collaboration, tourism management focuses not only on increasing the number of visits but also on creating added economic value directly felt by communities surrounding the destinations. Furthermore, improving accessibility and providing supporting tourism facilities are also top priorities. The local government, along with relevant parties, continues to strive to improve road infrastructure to coastal destinations, add transportation facilities, and expand accommodation facilities and public services. This aims to ensure tourist comfort and safety, while simultaneously increasing the competitiveness of East Lombok's coastal destinations compared to other regions. Therefore, the coastal tourism development strategy in East Lombok Regency relies not only on normative policies but also on strengthening collaboration, improving access, and adding tourism facilities. These efforts are expected to establish coastal tourism as a leading sector, contributing significantly to improving community welfare and sustainable regional economic growth.

The environmental condition of coastal areas must be protected to ensure their continued use. The East Lombok Regency Government is committed to implementing various sustainability-oriented policies and strategic programs. The local government recognizes that coastal areas are crucial assets, possessing not only high ecological value but also a key pillar of the tourism, fisheries, and local economic sectors. Therefore, coastal area management is directed towards maintaining a balance between economic use and environmental preservation.

One concrete manifestation of this commitment is the establishment of regulations and spatial plans governing coastal zoning, as outlined in Regional Regulation Number 2 of 2012 concerning the 2012–2032 Regional Spatial Plan (RTRW), so that its utilization can be properly managed without causing environmental degradation. The condition of East Lombok Regency's marine waters remains quite ideal, as evidenced by the average seawater quality standards remaining within the normal range. However, tourism waste and marine activities pose a serious threat and need to be addressed through Green Ports and waste management. These healthy waters support the growth of living creatures within them, thereby increasing the potential for capture fisheries. Furthermore, the East Lombok Regency Government consistently carries out coastal ecosystem rehabilitation programs, such as mangrove planting, coral reef conservation, and marine pollution control. This program is not only aimed at preserving biodiversity, but also at protecting coastal communities from the threats of abrasion, tidal flooding, and climate change. Based on the latest data released by Wahana Visi (Indonesia Vision Forum, 2025) East Lombok Regency has significant coastal ecosystem potential, with a conservation area and marine forest area reaching 61,537.38 hectares. This area includes important ecosystems such as mangroves, seagrass beds, and coral reefs, which are the main pillars of coastal environmental balance. In addition, the local government and the community have carried out mangrove rehabilitation efforts covering approximately 1,800 hectares spread across the Jerowaru, Sambelia, and Pringgabaya areas. This program demonstrates seriousness in maintaining the sustainability of coastal ecosystems, considering that mangroves function as natural protection from abrasion, carbon absorbers, and habitats for marine biota. Meanwhile, the condition of coral reefs in East Lombok waters is still relatively good with a coverage percentage reaching 65%, indicating a relatively well-maintained level of marine ecosystem health. 35% is in a damaged condition, but to date the lack of policies that accommodate specific coral reef protection has resulted in rehabilitation efforts being hampered. Healthy coral reefs not only serve as habitats for various types of coral fish and other marine biota, but also provide added value from a tourism perspective, especially marine ecotourism such as snorkeling and diving, which are popular with both domestic and international tourists.

The existence of this conservation area with its well-maintained ecosystem demonstrates East Lombok Regency's significant potential for developing environmentally sustainable tourism. Coastal ecosystem conservation and rehabilitation efforts not only serve to maintain the sustainability of natural resources but also provide positive economic impacts by increasing tourist appeal and the well-being of coastal communities. Therefore, conservation area management strategies based on community participation, collaboration between stakeholders, and the application of sustainable development principles are key to ensuring the sustainable use of coastal areas.

Empowering local communities in community-based environmental management. Tourism awareness groups, traditional institutions, and fishing communities are actively involved in efforts to maintain clean beaches, manage village-based waste, and develop environmentally friendly ecotourism. This approach is expected to build collective awareness that the sustainability of coastal areas is a shared responsibility. Furthermore, the local government collaborates with academics, NGOs, and the private sector in environmental research, education, and advocacy, ensuring that policies are always based on scientific data and multi-stakeholder participation. This cross-sector collaboration strengthens coastal environmental conservation efforts while ensuring their continued benefits for future generations. With these various steps, the East

Lombok Regency Government demonstrates a strong commitment to making coastal areas not only a pillar of the regional economy, but also a protected and sustainable ecosystem, so that their use can continue to provide long-term benefits for the community and the environment.

In general, the results of the analysis of the interpretation of achievements that have been validated with stakeholders show that The application of the BE principle in the coastal areas of East Lombok Regency has an adequate policy basis, but its implementation is still not optimal and is not fully aligned with field needs..This is evident in the existence of regional policies that support sustainable coastal resource management, including regional development plans, spatial planning regulations, and coastal ecosystem rehabilitation programs. However, their implementation still faces several obstacles, including limited inter-agency coordination, low local institutional capacity, and minimal integration between the fisheries, tourism, and conservation sectors.

This condition indicates that Although a regulatory framework is in place, the success of BE implementation is highly dependent on policy consistency, active involvement of coastal communities, and sustainable infrastructure and funding support. Furthermore, overlapping coastal space utilization between productive economic sectors and conservation activities continues, resulting in a lack of synchronization in regional management. Therefore, strategic steps are needed in the form of strengthening collaborative governance, enforcing coastal zoning regulations, and increasing the capacity of local communities, so that the BE principles can be realized in a more integrated manner and provide a real contribution to sustainable development in East Lombok Regency.

3.3 A Synergy Model of Sustainable Tourism and the Blue Economy in the Coastal Area of East Lombok Regency

The contribution of the economic sector in the East Lombok region can be seen from the district's GRDP contribution to the province. The total contribution of East Lombok Regency's GRDP to West Nusa Tenggara Province is 14.41% (BPS, 2025). Tourism in coastal areas, also known as marine tourism, is one of the supporting economic activities in the East Lombok community. A total of 23 marine tourism destinations are located in the coastal area of East Lombok (*Government tourism office*, 2024). Marine tourism in the East Lombok Regency is one of the pillars of the economy in East Lombok. The accommodation and food services sector, which is closely related to tourism activities, has grown significantly, contributing 1.21% to East Lombok Regency's GRDP.

Coastal management in East Lombok Regency still faces various challenges in realizing sustainable development, from an ecological, social, and economic perspective. The welfare of coastal communities is relatively low, as evidenced by limited education, low skills, and dependence on seasonal work in the fisheries and tourism sectors. Furthermore, a number of obstacles remain, including limited infrastructure, uneven distribution of marine tourism amenities, weak waste and sewage management, minimal digital promotion and destination branding, and suboptimal synergy between stakeholders (government, businesses, and the community). These conditions indicate that welfare in coastal areas remains lower than in urban areas. Chambers emphasized that community-based *coastal management* is an important approach to link ecosystem conservation efforts with community empowerment (Chamber, 2022). Meanwhile, through the concept of *Blue Economy* emphasizes the sustainable use of marine resources as a basis for economic development (Pauli, 2022).

Research findings by Pratiwi and Nugraha (2023) and a UNDP report (2024) also reinforce this view, emphasizing that strengthening basic infrastructure, effective waste management, and increasing the capacity of local human resources are key factors in promoting community well-being through the development of sustainable marine tourism.

The East Lombok Regency Government has undertaken a number of strategic initiatives to strengthen the marine tourism sector through programs *Marine Tourism Village* (Sea Goddess) and *Indonesian Maritime Village*, which focuses on developing mangrove and coral reef ecosystems as ecotourism attractions. At Ekas Beach, improvement efforts are being made through improving basic infrastructure such as clean water and telecommunications networks, as well as enforcing regulations for tourism operators, including regulating the role of local communities of *surf guide* to support regional income and local businesses. This policy aims to strengthen village independence, open economic opportunities, and improve coastal areas' competitiveness. Research by Purbaya & Santosa (2022) shows that empowering tourist village communities can increase local participation, while Pratiwi & Nugraha (2023) emphasize the importance of integrating ecotourism with mangrove and coral reef conservation within the Blue Economy framework. This emphasizes the need for regulatory and infrastructure support to achieve sustainable coastal community well-being.

Tourism has characteristic multiplier *effect*, where development not only impacts the core tourism sector but also influences various supporting sectors. In the context of marine tourism, this multiplier effect is reflected in increased employment, increased community income, and increased international tourist visits (Nuryadin & Purwiyanta, 2023). To ensure that marine tourism management remains aligned with the principles of sustainability as encompassed in the concept of *Blue Economy*, it is necessary to formulate a comprehensive optimization strategy through a SWOT analysis approach and a Conceptual Synergy Model for Sustainable Tourism and the Blue Economy:

Table 2. Strategy for Optimizing the Implementation of the Blue Economy in the Marine Tourism Sector

Internal Environmental Analysis	Strengths	Weaknesses)
External Environment Analysis	<ol style="list-style-type: none"> 1. Wealth of marine natural resources. 2. Cultural & religious based tourist attractions. 3. Community participation: Pokdarwis, Poklahsar, youth in mangrove and coral reef conservation. 4. Value-added processed seafood products 5. Potential for environmental educational tourism: Mangroves and coral reefs as natural laboratories 	<ol style="list-style-type: none"> 1. Infrastructure limitations: access roads, sanitation, drainage are still lacking. 2. Marine tourism amenities are not evenly distributed 3. Weak waste and garbage management: marine pollution due to household and fishpond waste. 4. Lack of private investment in the marine tourism sector. 5. Lack of digital promotion and branding of East Lombok destinations. 6. Partial stakeholder synergy (government, business actors, community).

	S – O Strategy (Maximizing Strengths to Seize Opportunities)	W-O Strategy (Minimizing Weaknesses by Utilizing Opportunities)
Opportunities: 1. Global trends in sustainable tourism: eco-friendly tourism, halal tourism, and ecotourism. 2. National & regional program support: KSPN Mandalika, NTB branding. 3. Religious, marine and conservation tourism market: a combination of pilgrimage, snorkeling, surfing, environmental education. 4. The role of the community is increasingly active in conservation. 5. Utilization of digital technology for promotion.	1. Exploration & promotion of marine tourism based on culture, religion, and nature. 2. Development of ecotourism & religious tourism with blue economy principles. 3. Integration of local attractions (sea cuisine, culture, conservation) with global ecotourism trends. 4. Utilization of digital media for destination promotion.	1. Improving basic infrastructure through synergy with the KSPN program. 2. Improvement of waste management with blue economy principles 3. Creating a digital promotion center for East Lombok. 4. Partnering with private investors for eco-friendly amenities. 5. Increasing the capacity of local human resources in sustainable tourism through hospitality & conservation training.
	S-T Strategy (Using Strengths to Counter Threats)	W-T Strategy (Reducing Weaknesses and Avoiding Threats)
Threats: 1. Natural disaster risks: earthquakes, tsunamis, abrasion. 2. Competition with other leading destinations (Mandalika, Gili Trawangan, Senggigi). 3. Over carrying tourism capacity. 4. Environmental pollution from waste and tourism activities. 5. Climate change: rising sea temperatures, abrasion, declining water quality.	1. Establish marine tourism zoning to avoid carrying overcapacity. 2. Diversify tourist attractions to stay competitive. 3. Making coral & mangrove conservation an attraction as well as disaster mitigation. 4. Strengthening the branding of East Lombok's unique religious and cultural tourism. 5. Strengthening Pokdarwis as the vanguard of	1. Development of basic tourism facilities (sanitation, drainage, transportation) 2. Development of a community-based integrated waste management system. 3. Implementation of environmentally friendly rules: ban on single-use plastics, management of pond waste. 4. Development of climate adaptation facilities: coastal belts, mangrove rehabilitation. 5. Cross-sector coordination for sustainable tourism governance.

	environmentally friendly tourism.	
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Source: Processed by researchers, 2025

To optimize the implementation of the Blue Economy in the marine tourism sector, strategies can be formulated using the Strength–Opportunity (SO), Weakness–Opportunity (WO), Strength–Threat (ST), and Weakness–Threat (WT) approaches. Implementing these strategies requires a series of measurable steps systematically designed to ensure the achievement of sustainable development goals in the marine tourism sector, including:

1. Exploration and promotion of marine tourism based on culture, religion and nature: Combining the potential of natural resources with cultural and religious traditions, and leveraging global trends toward sustainable tourism in the coastal areas of East Lombok Regency, this effort aims to strengthen tourism appeal through a unique local identity narrative, distinguishing the destination from other areas. This approach aligns with Blue Economy principles, as it not only increases tourism value but also encourages cultural preservation and coastal ecological sustainability.
2. Developing ecotourism and religious tourism with blue economy principles: The strategy for developing ecotourism and religious tourism focuses on the application of sustainability principles that balance economic, social, and environmental aspects. Destination management is carried out by taking into account environmental carrying capacity, marine ecosystem conservation, and empowering local communities as the main actors in providing tourism services. Thus, ecotourism and religious tourism function not only as recreational facilities but also as educational and empowerment media, thus creating synergy between improving community welfare and protecting the coastal environment.
3. Integrating local attractions (sea cuisine, culture, conservation) with global ecotourism trends: The strategy of integrating local attractions is carried out by packaging the uniqueness of sea cuisine, the richness of maritime arts and culture, and coastal ecosystem conservation practices into tour packages that align with global ecotourism trends. This integration not only expands the international market but also strengthens the destination's image as part of the global sustainable tourism network. This opens up opportunities to penetrate the international tourist market, which is increasingly demanding tourism products based on authenticity, sustainability, and authentic experiences.
4. Utilizing digital media for destination promotion: The digital media strategy is aimed at increasing the reach of marine tourism destination promotions through digital platforms, social media, and creative content-based information technology. Digitalization of promotions enables more efficient, interactive, and targeted marketing, particularly in attracting the interest of the younger generation and international tourists. Furthermore, this strategy supports the creation of a smart tourism ecosystem that facilitates information access, increases tourist engagement, and strengthens destination competitiveness in the era of globalization.
5. Improving basic infrastructure through synergy with the KSPN program: The main weakness of East Lombok's marine tourism is the limited basic infrastructure, such as road access, transportation facilities, clean water, and sanitation. To address this, an infrastructure improvement strategy is being implemented through synergy with

the Mandalika National Strategic Tourism Area (KSPN) program, which is geographically adjacent. This synergy will enable the development of a more equitable infrastructure network, strengthen connectivity between destinations, and encourage equitable distribution of the benefits of tourism development in coastal areas.

6. Improvement of waste and waste management with blue economy principles: The problem of plastic waste and household waste that continues to accumulate in coastal tourist areas is a weakness that can damage the destination's image. Therefore, implementing waste management based on blue economy principles is a crucial strategy. This effort includes integrated upstream to downstream management, the use of organic waste as compost, and plastic waste recycling programs through collaboration with local communities and the private sector. Implementing these principles not only reduces environmental pollution but also opens up new economic opportunities for coastal communities through the concept of a circular economy.
7. Creating a digital promotion center for East Lombok: Limited branding and digital promotion remain a weakness in East Lombok tourism marketing. Therefore, the establishment of an integrated digital promotion center is needed, functioning as a *hub for destination* information, event calendars, and online tourism service providers. This digital promotion center can be managed by the local government in collaboration with creative communities and tourism industry players. With this strategy, East Lombok can increase its global visibility and strengthen the destination's competitiveness in the international digital tourism ecosystem.
8. Partnering with private investors for eco-friendly amenities: The lack of quality amenities, such as eco-friendly accommodations, sustainable seafood restaurants, and modern recreational facilities, can be addressed by partnering with private investors. Investments will be directed toward developing amenities aligned with ecotourism principles, such as the use of renewable energy, wastewater management, and architectural design that integrates with the environment. This collaboration can improve the quality of tourism services, create jobs, and preserve the coastal environment of East Lombok.
9. Increasing the capacity of local human resources in sustainable tourism through hospitality and conservation training: Limited local human resource capacity, particularly in hospitality, destination management, and environmental conservation, poses a significant challenge. Capacity building strategies are implemented through integrated training programs involving universities, training institutions, and civil society organizations. This training covers tourism service skills, homestay management, foreign languages, and marine and coastal ecosystem conservation practices. This ensures that local communities become not only beneficiaries but also key actors in the sustainable management of tourism in East Lombok.
10. Establish marine tourism zoning to avoid carrying *overcapacity*: The threat of environmental degradation due to high tourist visits can be anticipated through the implementation of marine tourism zoning based on environmental carrying capacity (*carrying capacity*). East Lombok boasts a wealth of destinations that are highly vulnerable to ecosystem damage if overcrowding occurs. The zoning strategy not only divides areas based on conservation, recreation, and education functions but also regulates the intensity of tourist visits. This ensures sustainable tourism development without compromising the coastal ecological balance.

11. Diversify tourist attractions to stay competitive: Increasing competition with other marine destinations in West Nusa Tenggara, such as Mandalika and Gili Trawangan, requires East Lombok to diversify its attractions. This strategy can be realized by combining marine tourism, religious tourism, coastal agrotourism, and *geotourism* based on the unique karst landscape and coastal cliffs. Diversifying attractions expands tourist options and reduces reliance on a single tourism product. This is crucial for East Lombok to maintain its competitiveness amidst global competition.
12. Making coral and mangrove conservation an attraction as well as disaster mitigation of East Lombok has significant coral reef and mangrove forest areas, such as in Ekas Bay and Labuhan Haji, which can be developed as ecotourism attractions. Community-based conservation activities, such as mangrove planting, coral reef rehabilitation, and the release of baby turtles, not only serve as educational tourist attractions but also serve as coastal disaster mitigation efforts, including abrasion and tsunamis. This strategy emphasizes that conservation and tourism can go hand in hand, adhering to Blue Economy principles.
13. Strengthening the branding of East Lombok's unique religious and cultural tourism of the threat of homogenization of tourism products globally can be addressed by strengthening tourism branding based on East Lombok's unique religion and culture. Coastal Islamic traditions, music, and art *beleg drum*, and maritime traditional rituals can be promoted as a unique identity that other destinations do not possess. This branding is strengthened through cultural festivals, cross-regional promotions, and collaborations with *travel agent*. Thus, East Lombok has clear differentiation and high market value in the global tourism market.
14. Strengthening Pokdarwis as the vanguard of environmentally friendly tourism: The threat of tourism exploitation by external parties can be minimized by strengthening the role of Tourism Awareness Groups (Pokdarwis) as the vanguard in managing environmentally friendly destinations. Pokdarwis in East Lombok plays a strategic role in maintaining cleanliness, regulating community-based tourism management, and educating tourists about environmentally friendly behavior. Strengthening Pokdarwis' capacity through training, regulatory support, and access to funding will increase the independence of coastal communities in facing the threat of overexploitation.
15. Development of basic tourism facilities (sanitation, drainage, transportation): Weaknesses in basic infrastructure such as sanitation, drainage, and transportation access in several coastal destinations in East Lombok remain obstacles to the development of marine tourism. This situation can exacerbate the threat of environmental pollution and reduce tourist comfort. Therefore, developing basic infrastructure oriented towards environmentally friendly principles is a top priority. Modern sanitation facilities, sustainable drainage systems, and improved transportation access to tourist areas will improve service quality and reduce negative impacts on coastal ecosystems.
16. Development of a community-based integrated waste management system of Plastic waste and solid waste pose a serious threat to the sustainability of East Lombok's marine tourism. Weaknesses in waste management must be addressed through an integrated, community-based system. This strategy includes waste sorting at source, processing organic waste into compost, and strengthening coastal community-based recycling units. Through a participatory approach, communities become not only users of tourist destinations but also active actors in maintaining environmental cleanliness and sustainability.

17. Implementation of environmentally friendly rules: ban on single-use plastics, management of pond waste. The threat of ecosystem degradation due to fishpond waste and the use of single-use plastics demands the implementation of strict environmentally friendly regulations. The East Lombok regional government needs to issue regulations banning single-use plastics in tourist areas and oversee the management of fishpond waste to prevent water pollution. Implementing these regulations will address weaknesses in environmental governance and protect marine tourism attractions from ecological damage.
18. Development of climate adaptation facilities: coastal belts, mangrove rehabilitation of the coastal areas of East Lombok are highly vulnerable to climate change threats, including abrasion, sea level rise, and tropical storms. Weaknesses in adaptive infrastructure can be minimized by building natural and artificial coastal belts and rehabilitating mangrove areas, which serve as ecological buffer zones. This strategy not only reduces disaster risk but also creates added value as a conservation-based ecotourism attraction.
19. Cross-sector coordination for sustainable tourism governance. Weaknesses in coordination between stakeholders can exacerbate the threat of misalignment in marine tourism management policies. Therefore, cross-sectoral coordination involving local governments, businesses, local communities, academics, and non-governmental organizations is necessary. This collaborative governance will ensure that every tourism development policy and program aligns with sustainability principles, thereby addressing the threats of resource exploitation, environmental degradation, and socio-economic inequality in the coastal areas of East Lombok.

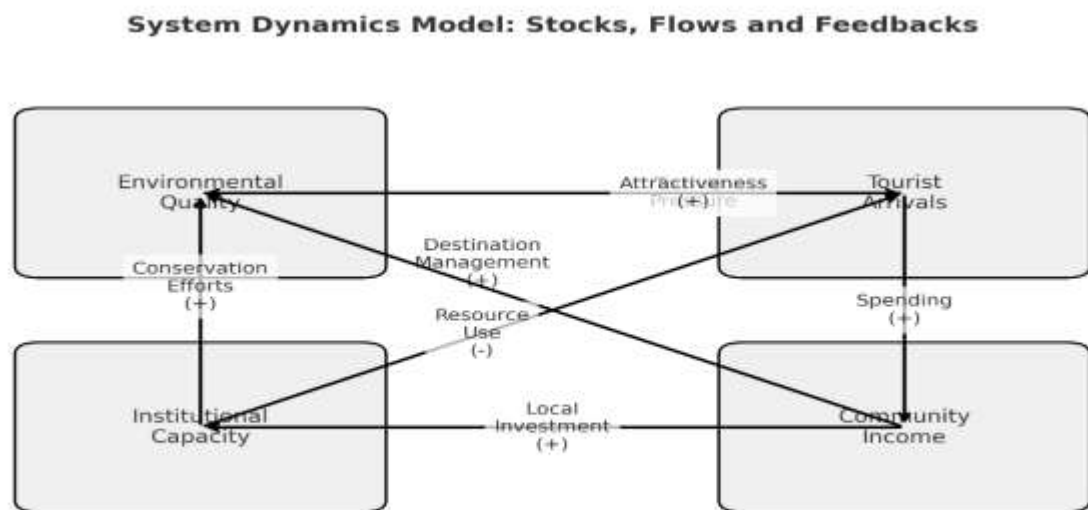


Figure 1. Conceptual Model of Synergy of Sustainable Tourism and Blue Economy

This synergy model illustrates the relationship between three main components: (1) Environmental conservation (mangroves, coral reefs, fisheries), (2) Empowerment of local communities through coastal economic diversification (fisheries, salt, community-based tourism), and (3) Sustainability-based local government policies (RIPARDA, coastal spatial planning, environmental regulations). These three components interact within a blue economy framework to create sustainable tourism.

This synergy produces sustainable economic, social, and ecological benefits for the people of East Lombok.

The System Dynamics model that was compiled describes the reciprocal relationship (feedback) between four main components, namely environmental quality., tourist arrivals, community income), And institutional capacity. These four components interact with each other through flows that reflect the dynamics of blue economy-based coastal tourism management in East Lombok Regency;

First, environmental quality is a key factor in maintaining the sustainability of tourist destinations. Research shows that the condition of ecosystems such as coral reefs and mangroves plays a crucial role in enhancing destination attractiveness. Conservation efforts have been proven to improve environmental quality, thus positively impacting increased tourist visits. However, excessive resource use, such as fishing with environmentally unfriendly tools or development without regard for coastal spatial planning, can degrade environmental quality and reduce tourist appeal.

Second, tourist visits are significantly influenced by the level of environmental attractiveness. A healthy and sustainable environment increases visits, while excessive tourism pressure can lead to environmental degradation. This situation indicates a negative feedback loop that functions as a control mechanism to prevent tourist numbers from exceeding the environment's carrying capacity.

Third, increased community income is a tangible impact of the coastal tourism sector. Tourist spending on culinary delights, transportation, homestays, and local products provides additional income for coastal communities. This demonstrates that tourism development has a multiplier effect on the local economy. However, it's important to note that economic leakage still occurs, especially if the majority of the profits are enjoyed by parties outside the region.

Fourth, institutional capacity plays a crucial role in regulating and managing tourism activities and the utilization of coastal resources. Local investment and institutional strengthening promote more effective destination management. Strong institutions also integrate zoning policies, conservation programs, and community empowerment. This creates a positive feedback loop: a well-maintained environment increases destination attractiveness, increases tourist numbers, increases community income, and increases investment, ultimately strengthening institutional capacity.

Thus, this model confirms that the success of developing blue economy-based coastal tourism in East Lombok Regency can only be achieved if there is a balance between four main aspects: environmental conservation, tourist visits, community empowerment, and institutional capacity..If one of these aspects is ignored, an imbalance will occur that has the potential to reduce the sustainability of tourism and the blue economy.

4. CONCLUSION

This study confirms that the coastal areas of East Lombok Regency have strategic potential for developing sustainable tourism based on the blue economy through marine tourism, ecotourism, fisheries cultivation, and artisanal salt production. However, the implementation of the blue economy concept has not been fully optimized due to limited infrastructure, low local institutional capacity, and weak synergy between stakeholders. The formulated synergy model emphasizes four main pillars: environmental conservation, tourist visits, coastal community empowerment, and support for sustainability-based government policies. The integration of these four aspects plays a crucial role in improving community welfare while maintaining the sustainability of coastal ecosystems.

To realize the implementation of *Blue Economy* in the coastal tourism sector in East Lombok Regency: First, strengthening local institutions and increasing community capacity through training, mentoring, and empowering productive economies. Second, improving the quality of basic infrastructure such as accessibility, sanitation, and waste management to support the sustainability of coastal destinations. Third, optimizing digital promotion and destination branding to strengthen East Lombok's competitiveness at the national and international levels. Fourth, consistently enforcing coastal zoning policies to prevent conflicts over land use and maintain ecosystem sustainability. Fifth, expanding the involvement of the private sector and investors through strategic partnerships aligned with the principles of sustainable development.

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