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# IMPLEMENTATION OF THE BLUE ECONOMY CONCEPT IN AQUACULTURE IN SUMBAWA REGENCY

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**Abstract**

*This study aims to obtain, analyze, and interpret information from various library sources in order to deepen understanding related to the Application of the Blue Economy Concept in Aquaculture in Sumbawa Regency. This study uses a descriptive approach with a literature study research method used to collect relevant and significant data by detailing information from various library sources. Data obtained from this literature study research method include books, reports, documents, and research results that have been published in journals that have gone through a peer review process. The results of the analysis show that the application of the blue economy in aquaculture in Sumbawa Regency includes: Sustainable Marine Resource Management, Increasing the Added Value of Fishery Products, Increasing Community Welfare, Innovation and Technology.*

***Keywords:*** *Blue Economy, Aquaculture in Sumbawa Regency*

## INTRODUCTION

Geographically, Sumbawa Regency is one of the areas in West Nusa Tenggara Province that has the greatest potential for the fisheries and marine industry. Sumbawa's long coastline, biologically diverse waters, and temperate tropical climate make it the perfect place to start aquaculture business..

Aquaculture, also known as aquaculture, is a term used to describe the regulated growth and development of aquatic life, such as fish, shrimp, shellfish, and aquatic plants, for the purpose of making a profit. Aquaculture is not the same as capture fisheries, which focus on catching fish in the wild. Aquaculture aims to produce fish for human use to meet customer demand and make money.

The Blue Economy (BE) principle aims to encourage economic growth in the marine and fisheries sector while maintaining the sustainability of resources (Pauli, 2010). The BE idea will focus on the growth of the people's economy as a whole in order to achieve national development as a whole. The BE concept and

other sustainable development concepts have now become the center of attention in economic development strategies in several countries, including Indonesia. According to Zamroni et al., (2019), the BE principle essentially emphasizes the use of creativity and innovation to convert raw materials into raw materials for more derivative goods with zero waste. (Zamroni et al., 2019)

Among the challenges facing the implementation of the blue economy in relation to sustainable marine resource management are overfishing, pollution, habitat loss, and inequitable development that neglects small-scale fishers. These issues need to be fully addressed to achieve the goal of a sustainable blue economy. Because blue economy strategies, such as quota-based measured fishing regulations, often ignore or fail to take into account small-scale fishers and local communities, they feel neglected and development is inequitable. Fish populations can be depleted and marine ecosystems damaged by the use of bottom trawls and other unsustainable fishing techniques. Waste from homes, agriculture, and industry is just one of the many types of pollution that can pollute the ocean and harm marine life. Uncontrolled mining, fishing, and infrastructure development can have negative impacts on marine habitats, such as coral reefs and mangroves.

Increasing the added value of fishery products in the context of the blue economy is hampered by several important factors. One of them is the unavailability of modern fish processing and storage facilities, as well as other supporting infrastructure and technology. Other obstacles are limited market access and ignorance of the potential of the industry. Sustainability issues also need to be considered, including maintaining the sustainability of fishery resources and preventing pollution.

Improving community welfare through the blue economy faces various problems, including excessive exploitation of marine resources, lack of infrastructure, and injustice in the distribution of benefits. Lack of knowledge and raw materials are also challenges in developing marine processed products, as well as the problem of the blue economy performance database that does not meet standards. On the other hand, the concept of the blue economy is also often criticized in practice regarding the bias in focusing on GDP growth and aggregate economic benefits rather than focusing on more holistic steps such as community welfare and progress in the environmental sector.

The implementation of blue economy, although promising to improve the marine economy, also brings various problems of marine environmental conservation. The main challenges are overfishing, pollution, climate change, and habitat destruction. In addition, injustice in development and distribution of benefits, as well as the lack of participation of coastal communities are also serious problems.

Businesses that use traditional and conventional technology to produce the same output as businesses that use advanced technology require very large inputs, so that traditional technology has the potential to produce quite large amounts of waste (Coremap, 2006). This waste is produced because the productivity of the

technology is very low. Businesses in the marine and fisheries sector generally produce waste with varying volumes. The waste produced is generally in the form of liquids, solids and gases. The latter waste is formed due to oxidation between solid and liquid waste with air.

The application of innovation and technology in the blue economy is faced with various problems, especially related to limited access, uneven understanding, and implementation challenges in the field. In addition, issues related to environmental sustainability, development injustice, and suboptimal use of resources are also major challenges..

Based on several problems that have been described previously, this study aims to obtain, analyze, and interpret information from various library sources in order to deepen understanding related to the Application of the Blue Economy Concept in Aquaculture in Sumbawa Regency.

## METHOD

This study uses a descriptive approach with a literature study research method used to collect relevant and significant data by detailing information from various library sources. Data obtained from this literature study research method includes books, reports, documents, and research results that have been published in journals that have gone through a peer review process.

## RESULTS AND DISCUSSION

From the results of research conducted through data collection from various library sources including reports, documents, and research results that have been published in journals that have gone through a peer review process, it can be explained that the Application of the Blue Economy Concept in Aquaculture in Sumbawa Regency includes:

### Sustainable Management of Marine Resources

Sustainable marine resource management aims to maintain a balance between utilization and conservation. Thus, the fish population will not decline due to fishing practices. In Sumbawa Regency, the local government continues to make various efforts to improve sustainable fisheries management. Sumbawa Regency has very abundant fishery resources. In addition, the community and government can also implement responsible fishing practices, for example: Using environmentally friendly fishing gear so as not to damage the marine ecosystem; Utilizing natural resources wisely by adhering to environmental sustainability principles. Sustainable marine resource management in Sumbawa Regency involves efforts to maintain the balance of the marine ecosystem and ensure responsible use of fishery resources. This includes environmentally friendly fishing practices, increasing public awareness, and developing marine conservation areas.

Based on the Decree of the Minister of Marine Affairs and Fisheries No. 35/KEPMEN-KP/2013, Sumbawa Regency is one of the areas in the province of NTB that has potential marine and fisheries resources, so it has been designated as a minapolitan area. One program that is very relevant to the implementation of Blue Economy in Sumbawa Regency is the Water Resources Management Control and Supervision Program. This program aims to maintain and improve the function of water resources in order to support the development of aquaculture areas. In this case, it is expected that the management of water resources can be carried out by paying attention to aspects of sustainability and not exploiting resources excessively which will have an impact on the water ecosystem, which ultimately reduces fisheries production (Radiarta et al., 2105)

In line with what was stated by Andayani et al., (2025) who argued that Blue Economy (BE)-based aquaculture emphasizes a balance between economic growth and marine ecosystem preservation. For Sumbawa Regency, this is relevant considering the large potential of marine resources and the vulnerability of its ecosystem. Andayani et al., (2025) explained that one of the priorities in developing blue economy-based aquaculture in Sumbawa Regency is education for the community about the importance of blue economy and the impact of aquaculture on the environment. Several efforts have been made through blue economy socialization and outreach activities, one of which was carried out by Jumaidi et al., (2024) on Bungin Island, Sumbawa Regency.

**Increasing the Added Value of Fishery Products**

Increasing the added value of fishery products in the implementation of the blue economy in Sumbawa Regency can be done by: Developing entrepreneurship in marine and fishery products, Improving technology, Maintaining the sustainability of resources, Preserving and processing fishery products, Developing products from underutilized species and by-catch..

Riesnandar et al, (2025) stated that in the Blue Economy, marine products should be able to have higher added value through sustainable processing. Training and increasing community understanding of the principles of the Blue Economy are the main solutions to improve the welfare of fishermen and fisheries business actors in the area. Jumaidi et al., (2024) explained that utilizing marine resources to create food or cosmetic products from marine ingredients. This not only supports sustainability, but also provides added value to these products.

Diversification of aquaculture products is an effort to increase the added value and variety of fishery products by utilizing raw materials from cultivation, such as seaweed, fish, shrimp, or crab, into various types of processed products. The aim is to increase consumption, income, and the selling value of fishery products. Pawestri et al., (2024) stated that one of the main reasons why seaweed processing in Sumbawa Regency is important is for product diversification that can increase economic added value. Seaweed that is processed into products such as candy, snacks, or cosmetic ingredients has the potential to be sold at higher

prices and marketed more widely, both locally and nationally, thus opening up opportunities for greater profits.

**Improving Community Welfare**

With the various challenges and opportunities that exist, the Blue Economy is a development model that can bring long-term benefits to community welfare and environmental sustainability (Riesnandar et al, 2025). Referring to the concept of the blue economy which emphasizes the utilization of marine products but remains sustainable and the concept of empowering coastal communities which aims to improve the economy with supplies and knowledge to utilize marine products as much as possible. Improving community welfare in the implementation of the blue economy in Sumbawa Regency is carried out through empowering coastal communities. Development of human resources based on the blue economy Through community service, increasing the capacity of human resources (HR) based on the blue economy.

Dhaniswari et al., (2024) stated that community and social strengthening through the formation of Productive Community Groups (KMP) is one of the foundations in devotion to empowering the potential of village communities in processing their own marine products. Community and social strengthening can play an important role in increasing productivity by facilitating the flow of new ideas and new ways of doing work and solving problems (Rosliana, 2023). The formation of KMP as a forum for cooperation and elaboration in utilizing existing economic opportunities, namely abundant marine products, one of which is seaweed, to increase community income and welfare.

In Sumbawa Regency, the implementation of the blue economy is an effective strategy to improve the welfare of coastal communities while ensuring environmental sustainability. This approach, which prioritizes the wise and sustainable use of marine resources, has successfully demonstrated great potential in empowering local communities through capacity and skill enhancement (Randi et al., 2020)

**Innovation and Technology**

Innovation and technology can be applied in the implementation of the blue economy in Sumbawa Regency through sustainable management of marine resources, as well as processing marine products into new products. Innovation and technology in marine resource management include: Utilizing technology to expand marine conservation areas; Developing renewable energy from the sea, such as offshore wind farms; Developing marine bioeconomy, such as water desalination. Innovation and technology in marine product processing include: processing seaweed-based products; Developing technology to increase food production.

Pawestri et al., (2024) argue that one of the activities that has been carried out in an effort to increase innovation is counseling in the form of seaweed-based

product development training, which is a step to encourage the creation of entrepreneurial activities. Product innovation is very important for businesses to retain consumers, adapt to changes in the business environment, and align with advances in industry and technology.

Andayani et al., (2025) explained that the establishment of a training and research center to support innovation and increase the capacity of aquaculture is a top priority in the development of aquaculture in Sumbawa Regency. The establishment of a training and research center is very important to support innovation and increase the capacity of farmers because it can increase their knowledge, skills, and abilities in running aquaculture businesses. This center functions as a place for research related to innovation, technology and training that can provide benefits for development programs and improve the quality of aquaculture results..

## CONCLUSION

Based on the results of the study conducted using the literature study research method, it explains that the Application of the Blue Economy Concept in Aquaculture in Sumbawa Regency includes: 1). Sustainable management of marine resources in Sumbawa Regency involves efforts to maintain the balance of the marine ecosystem and ensure the responsible use of fishery resources; 2). Increasing the added value of fishery products in the application of the blue economy in Sumbawa Regency can be done by: Developing entrepreneurship in marine and fishery products, Improving technology, Maintaining the sustainability of resources, Preserving and processing fishery products, Developing products from underutilized species and by-catch; 3). Cooperation and elaboration in utilizing existing economic opportunities, namely abundant marine products, one of which is seaweed to increase community income and welfare; 4). Innovation and technology in marine resource management include: Utilizing technology to expand marine conservation areas; Developing renewable energy from the sea, such as offshore wind farms; Developing marine bioeconomy, such as water desalination. Innovation and technology in processing marine products include: processing seaweed-based products; Developing technology to increase food production.

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