



Empowering Sustainable Village Tourism in Payangan Jember Through Lautify and the Blue Economy

Pemberdayaan Pariwisata Berkelanjutan di Desa Payangan Jember Melalui Lautify dan Blue Economy

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Abstrak

Era Revolusi Industri 4.0 dan Masyarakat 5.0 telah memposisikan digitalisasi sebagai strategi kunci untuk meningkatkan daya saing bisnis di periode pasca-COVID-19. Transformasi digital membuka peluang baru bagi sektor maritim, yang memiliki potensi signifikan namun masih kurang dimanfaatkan. Studi ini meneliti integrasi konsep Ekonomi Biru dan digitalisasi dalam pengembangan UMKM pesisir di Pantai Payangan, Kabupaten Jember, sebagai upaya untuk meningkatkan kesejahteraan masyarakat secara berkelanjutan. Pemanfaatan sumber daya laut di daerah tersebut masih terbatas pada bentuk mentah, yang memiliki nilai ekonomi rendah. Pengolahan produk laut menjadi barang bernilai tambah seperti abon ikan, kerupuk kulit ikan, dan tepung ikan dianggap efektif dalam meningkatkan perekonomian lokal. Pemasaran digital melalui media sosial dan pasar online digunakan untuk memperluas jangkauan pasar. Implementasi inisiatif ini meliputi pelatihan pengolahan produk, manajemen keuangan, dan pemasaran digital bagi ibu rumah tangga dan pemuda di Desa Sumberejo. Konsep Ekonomi Biru diterapkan dengan menekankan keberlanjutan lingkungan dan pengurangan limbah. Hasil penelitian menunjukkan bahwa integrasi digitalisasi dan ekonomi biru berpotensi menciptakan peluang ekonomi baru dan memperkuat fondasi pembangunan berkelanjutan di daerah pesisir.

Kata kunci: *Ekonomi Biru, Digitalisasi, Pembangunan Berkelanjutan, Pengolahan Produk Kelautan, UMKM Pesisir, Pengurangan Limbah*

Abstract

The era of the Industrial Revolution 4.0 and Society 5.0 has positioned digitalization as a key strategy to enhance business competitiveness in the post-COVID-19 period. Digital transformation opens new opportunities for the maritime sector, which holds significant potential yet remains underutilized. This study examines the integration of the Blue Economy concept and digitalization in the development of coastal MSMEs in Payangan Beach, Jember Regency, as an effort to sustainably improve community welfare. The utilization of marine resources in the area is still limited to raw forms, which have low economic value. Processing marine products into value-added items such as fish floss, fish skin crackers, and fish meal is considered effective in boosting the local economy. Digital marketing through social media and online marketplaces is employed to expand market reach. The implementation of this initiative includes training in product processing, financial management, and digital marketing for housewives and youth in Sumberejo Village. The Blue Economy concept is applied by emphasizing environmental sustainability and waste reduction. The results of the study indicate that integrating digitalization and the blue economy holds the potential to create new economic opportunities and strengthen the foundation for sustainable development in coastal areas.

Keywords: *Blue Economy, Digitalization, Sustainable Development, Marine Product Processing, Coastal MSMEs, Waste Reduction*

INTRODUCTION

Business actors are required to adapt to the rapid development of digital technology in order to maintain competitiveness, especially in the aftermath of the COVID-19 pandemic which negatively affected the village economy amidst the Industrial Revolution 4.0 and the transition toward Society 5.0. One adaptive approach that has proven effective in addressing these challenges is the implementation of digital marketing strategies, as it enables wider market access and strengthens the positioning of local products in a competitive market (Rasyidin et al., 2024). Indonesia holds vast potential in the marine sector with approximately 65% of its territory consisting of ocean (Hakim et al., 2023). Despite this great potential, the sector still faces various obstacles, such as environmental degradation, the impacts of climate change, and unsustainable development patterns. In order to address these issues, Indonesia has begun to adopt the Blue Economy approach, which emphasizes the optimal use of marine resources to improve community welfare while preserving the ecosystem (Sumarmi et al., 2020).

The optimal use of marine resources is one of the way to maintain ecosystem sustainability which will have a significant impact on sustainable development and the economic resilience of a nation. Another comprehensive development effort is the implementation of the Sustainable Development Goals (SDGs), which cover all aspects of development with the aim of achieving equitable and sustainable community welfare (Hasanuddin & Achmad, 2022) as cited in (Latifah & Abdullah, 2024). Indonesia's national development agenda to strengthen the Blue Economy as a driver of sustainable recovery under the SDGs currently faces significant challenges. These challenges include increasing deforestation and unsustainable industrial development, leading to unprecedented rates of climate change. Dwikorita Karnawati from the Meteorology, Climatology, and Geophysics Agency (BMKG) stated that the impacts of climate change on Earth are becoming increasingly alarming. According to her, this issue poses a threat not only to Indonesia but to the global community as well (Aditya, 2024) as cited in (Purwanto & Mulyaningsih, 2024).

The global community consists of many kinds of communities and coastal communities are among the most vulnerable social groups to the instability caused by climate change. Rising temperatures, higher sea waves, coastal erosion, and damage to coastal biodiversity are all indicators of the serious threats faced by maritime areas (Purwanto & Mulyaningsih, 2024). This problem then leads to the implementation of The Blue Economy concept which emphasizes the sustainable use of marine resources to drive economic growth, improve livelihoods, and create employment opportunities, all while protecting the marine ecosystem. Nationally, the economic potential of the Blue Economy is estimated to reach USD 1.33 billion and could employ up to 45 million people (Hakim et al., 2023). The Blue Economy has emerged as a solution for developing sustainable tourism by utilizing marine and coastal resources wisely. This also supports the village-level SDGs, particularly indicator 14 is villages that care for marine environments. villages can create a sustainable and inclusive model by integrating the blue economy principles into tourism development.

This approach is especially relevant in regions with strong coastal potential and unique geographical characteristics. Payangan Beach is a coastal area in Jember Regency, located in Sumberejo Village, Ambulu District, known for its natural beauty and scenic hills overlooking the sea. One of its most unique features is its heart shaped shoreline, which draws numerous visitors. This is a valuable asset that can be preserved and developed into a tourism-based enterprise to

generate additional village income. Ambulu District itself consists of seven villages. According to the 2024 Village Potential Statistics for Jember Regency, the data for Ambulu is as follows:

Category	Present	Absent
Environmental Conservation	3	4
Waste Processing/Recycling	1	2
Village Owned Enterprises (BUMDes)	6	1
Village Information & Financial Systems	7	-

Source: Village Potential Survey, Jember Regency, 2024

Despite the progress, environmental conservation remains limited, and the village community still struggles with digitalization. A lack of understanding of social media platforms has prevented residents from maximizing their assets. For example, Sumberejo Village has yet to effectively implement the principles of blue economy and digitalization. In fact, digitalization plays a vital role in strengthening village tourism. Through digital technology, information about tourism potential can be disseminated more widely, attracting more visitors and enhancing interaction between tourists and local communities. Digital tools can also assist in the management and promotion of community run tourism enterprises in Sumberejo Village.

Limited access to tourism information for external audiences remains a challenge. However, the implementation of a blue economy model could help preserve the sustainability of Payangan Beach and offer long-term benefits to the village. Currently, tourism governance at Payangan Beach is still not fully optimized and has yet to be managed wisely. Local government has also not taken adequate action in this regard, even though Payangan Beach holds the potential to become a highly profitable asset if managed properly. From the background above, problem statement in this study is: “How can the marine potential of Payangan Beach be explored and marketed to generate added value through blue economy-based processed products?”. From the problem statement above, research objective in this study is: “To analyze strategies for exploring and marketing the marine potential of Payangan Beach to generate added value through blue economy-based processed products”.

RESEARCH METHOD

The method applied in this study is a descriptive qualitative method. This research method focuses on processing descriptive data (Djam'an Satori, 2011: 23) as cited in (Hanyfah et al., 2022). A case study approach is employed in this research. In other words, a case study is a type of research in which the researcher investigates a particular phenomenon (case) within a specific timeframe and context (program, event, process, institution, or social group), and collects detailed and in-depth information using various data collection techniques over a certain period (John W. Creswell, 1998) as cited in Assyakurrohim et al., 2022). The data used in this research consists of both primary and secondary data.

The identification results in understanding the issues faced which was obtained through qualitative approach using a case study method, serve as the foundation for designing a technology based solution that aligns with the local context and the actual needs of users. To implement this solution in the form of a web based information system, the design and development process is

carried out using the waterfall method. According to Irwanto 2021), the waterfall model describes a software development process that follows sequential stages, starting from analysis, design, coding, testing, to support/maintenance, where each phase has an impact on the overall system. This method is known as the classical life cycle model, which adopts a systematic and sequential approach (Pressman, 2010). According to Sukanto & Shalahuddin (2013), the activities in the waterfall model are as follows:

1. Requirement Analysis
This process involves analyzing the necessary requirements for website development, either in the form of documents or other sources that can provide solutions for both developers and users.
2. Design
This stage involves designing the website to be developed. The website design in this study adopts a marketplace model.
3. Website Development
At this stage, the website is built based on the requirement analysis. The website is developed using Google Sites.
4. Testing
The testing process involves collecting user testimonials to evaluate the usability and effectiveness of the website.
5. Support and Maintenance
The maintenance process involves reviewing user testimonials and carrying out updates or further development periodically based on user feedback.

The data collection techniques used in the development of the website based on Google Sites are as follows:

1. Direct Observation
The researcher conducted direct field observations by visiting the research site at Payangan Beach, Sumberejo Village, Ambulu District, Jember Regency, to obtain data related to the topic of blue economy and digitalization, which were then analyzed and evaluated.
2. Interview
To complement the observations, the researcher conducted interviews to gain deeper insights into the selected topic. Interviews were carried out with local fishermen and MSME actors in Payangan Beach, Sumberejo Village.
3. Literatur Review
Additionally, data were gathered through a literature study. In this method, the researcher reviewed books and other relevant sources related to the research topic. This provided theoretical insights to support the analysis, design, and overall writing of the research.

RESULTS AND DISCUSSION

The Blue Economy Concept for Empowering Coastal Communities Through Sustainable Marine Utilization

The blue economy concept emphasizes the sustainable utilization of marine resources to generate economic value without compromising environmental integrity. In Payangan Beach, despite its vast marine potential, local utilization remains limited to the sale of raw fish, which

offers minimal economic value. Consequently, fishermen's income remains stagnant. Implementing the blue economy in coastal areas to maximize existing potential undoubtedly involves numerous challenges that must be addressed. Several key challenges hinder the implementation of the blue economy at Payangan Beach, namely:

1. **Lack of Added Value in Marine Commodities because Raw Product Sales Constraints**
Most fishermen in Payangan Beach still sell their catch, such as skipjack and mackerel tuna, in raw form due to limited knowledge, capital, and production tools. The absence of innovation has led to dependency on middlemen and uncompetitive pricing. Fishermen receive only 25% of the total catch's value, with the remaining 75% going to their boat owners. This occurs despite the potential for earnings of IDR 2–5 million per trip. Such patterns hinder the prosperity of coastal communities. The blue economy encourages a shift from extractive to productive innovation based economies.
2. **Lack of Training and Education for Fishermen and MSMEs in Marine Product Processing**
Interviews with local fishermen and MSME actors revealed that they typically sell only primary marine products, discarding fish waste carelessly. This practice leads to significant waste accumulation and environmental degradation at Payangan Beach. Coastal communities have not yet fully understood the implementation of the blue economy in preserving the environment to achieve sustainable economic development. Consequently, the limited utilization of marine resources into marketable products remains an ongoing issue.
3. **Limited Use of Digital Technology**
The coastal community of Payangan relies heavily on visiting tourists to sell their products. Compared to other beach tourism destinations in Jember Regency, Payangan Beach remains relatively under-visited despite its remarkable natural beauty. This is truly unfortunate, especially if its potential is not fully utilized. This has resulted in MSMEs around the beach closing or incurring losses, forcing many to switch to selling non-local products like bottled water or instant noodles.

Optimizing the Blue Economy Through Marine Product Innovation and Digitalization in Payangan Beach

Pantai Located in Jember Regency, East Java, Payangan Beach holds vast potential in the marine and fisheries sector. In addition to fish, Payangan Beach also possesses other marine potentials, such as shellfish. According to the Kementerian Kelautan dan Perikanan (2025), optimizing marine resources through innovative product processing and digitalization forms a key strategy in supporting sustainable prosperity among coastal communities under the blue economy framework.

Through the blue economy approach, marine resources such as fish and fish skin can be transformed into high value products like shredded fish, fish skin chips, or fish meal. Aside from fish, shellfish also have the potential to be developed into marketable products. This not only boosts the local economy but also reduces marine waste. Digitalization also plays a crucial role by expanding market reach through social media marketing and improving financial management for MSMEs through Excel-based tools.

Thus, blue economy optimization at Payangan Beach does not merely create new economic opportunities it also supports environmental sustainability and improves the welfare of coastal communities. The following steps are proposed to implement this strategy:

1. Product Innovation as a Blue Economy Implementation

This program focuses on innovating processed marine products, particularly fish. The main innovations include shredded fish as a high value primary product, fish skin crackers from previously discarded waste, and fish meal to prevent resource wastage. This step aligns with the zero-waste principle of the blue economy, where no part of the marine catch goes unused. Every by product is processed into marketable goods, boosting income for local residents, especially fishermen and nearby communities. The blue economy is not merely about using marine resources it transforms the mindset from raw commodity sales to producing and marketing sustainable processed goods.

2. MSME Training for Women and Youth

Training sessions aim to enhance the skills of local residents, particularly housewives and youth, in three main areas: processing techniques for shredded fish and crackers, attractive and market-standard packaging, and local branding with a visual identity unique to Payangan.

3. MSME Digitalization and Marine Product Marketing Strategy

Residents are also trained in digital marketing strategies to expand their market reach through platforms such as Instagram and TikTok for visual storytelling and promotion, Canva and capcut for content creation, Local marketplaces for product distribution. This strategy introduces modern, user-friendly tools easily adopted by the younger generation already familiar with smartphones. Narratives behind the products, the locality of ingredients, and sustainable processes serve as powerful marketing points to attract wider audiences.

4. Basic Financial Management Education for Coastal MSMEs

Financial management is also a key focus to help residents distinguish between business and personal finances. Training includes like how to recording income and expenses, how to use excel to make a financial report, and simulation how to separate between capital, profit and savings. These trainings emphasize the importance of financial recording and basic planning to ensure business sustainability and prevent collapse due to poor fund management.

Lautify Website (Applying the Blue Economy to Support Coastal MSMEs Through a Digital Marketplace)

Lautify is a marketplace platform designed to promote the growth of coastal MSMEs through the application of blue economy principles. Lautify connects local entrepreneurs to broader markets, focusing on processed fish products and fishery by products such as smoked fish, shredded fish, fish meal, fish skin crackers, handcrafted shell bracelets, and other creative items.

Through a sustainable approach, Lautify addresses not only economic but also environmental and social aspects. This initiative aims to enhance the value of marine products, reduce waste, and strengthen coastal entrepreneurs capacities through digital technology and online market networks. The website also functions as a space for collaboration, education, and innovation among coastal business actors eager to grow within the blue economy.

Analysis and System Design

1. Software Used

This website was developed using Google Sites, which offers an accessible platform for beginners to create websites without programming knowledge. It is particularly suitable for those seeking to promote their businesses online. The flowchart of the Lautify website is presented as follows:

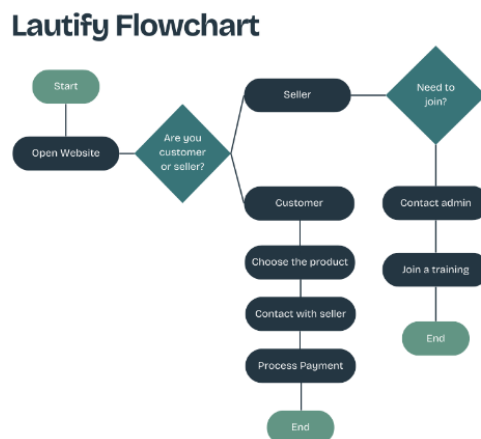


Figure 1. Flowchart

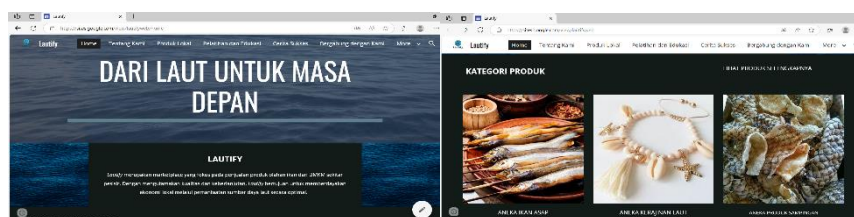
2. Website Design

The design integrates Canva and tools available in Google Sites to create visually appealing pages that attract user engagement. The Lautify website can be accessed via the following link: <https://sites.google.com/view/lautifyweb>

The website features the following layout:

a. Home

Introduces Lautify as a marketplace platform that supports coastal MSMEs by promoting innovative marine based products from Payangan Beach, Jember. The homepage features the slogan “From the Sea for the Future,” reflecting Lautify’s commitment to quality and sustainability in marine resource utilization. It also highlights product categories, success stories, and the latest training information, all of which are easily accessible for users seeking comprehensive and clear details.



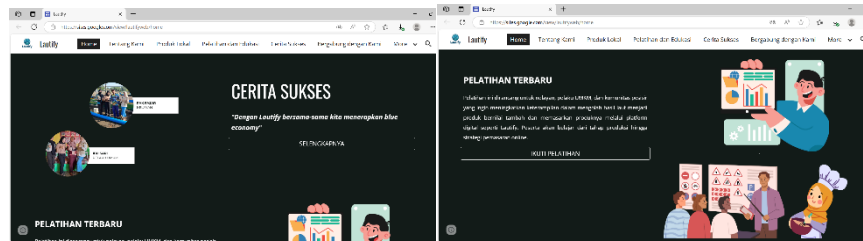


Figure 2. Home View

b. About Us

This page outlines Lautify's mission and vision in empowering the local economy through the sustainable utilization of marine resources. It aligns with Village SDGs Goal No. 14, which promotes the creation and sale of innovative products with higher market value compared to unprocessed or raw marine products. Additionally, Lautify aims to foster the development of the blue economy by supporting coastal MSMEs in Payangan Beach, Jember.

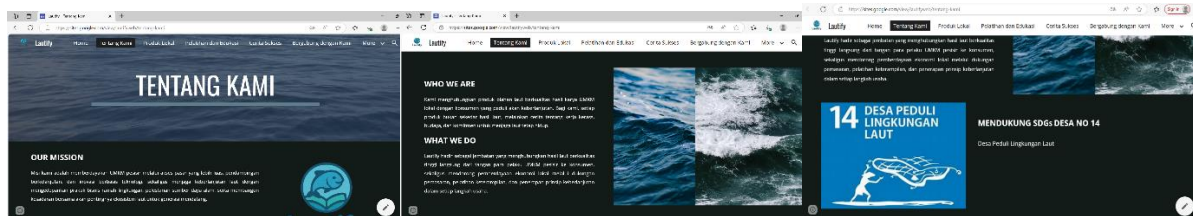


Figure 3. About Us View

c. Local Product

This page showcases a variety of innovative local products, ranging from processed fish items, marine handicrafts, to value-added products utilizing all parts of the fish to prevent waste. The processed fish products include smoked skipjack tuna, smoked bagong fish, and smoked catfish. Marine handicrafts feature items such as pearl shell bracelets, shell picture frames, and shell tissue boxes. Other processed products include fish skin crackers, shredded fish, and fish meal. Each product is accompanied by a description and pricing to facilitate ordering.

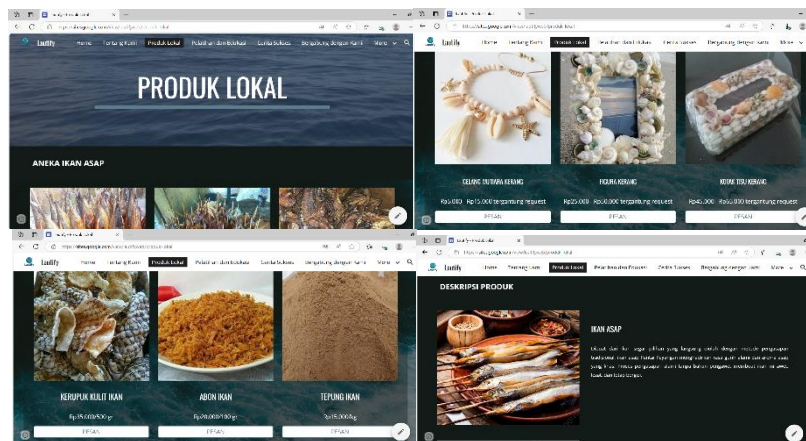


Figure 4. Customer Menu View

d. Training and Education

This page provides training opportunities for fishermen, MSME actors, and coastal community members to enhance their skills and gain new knowledge on transforming marine resources into high-value innovative products. The training also includes marketing techniques for promoting products via social media and online platforms, enabling customers to access these products from anywhere not just during visits to Payangan Beach, Jember.

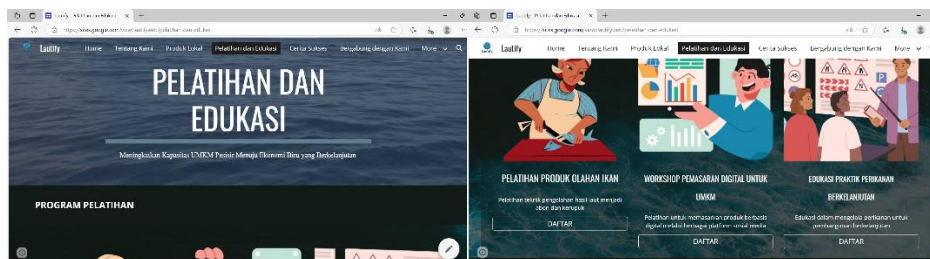


Figure 5. Training Page View

e. Success Stories

This page features inspiring success stories from MSME owners and coastal residents who have grown alongside Lautify. These narratives aim to motivate others to take initiative and develop their local economies by improving how they process and utilize marine products. These stories also illustrate Lautify's positive impact in advancing the blue economy.

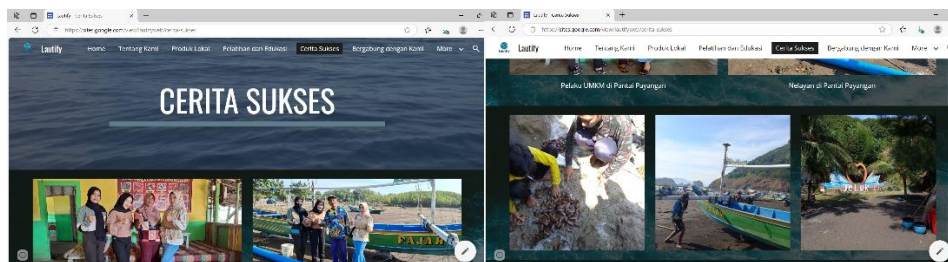


Figure 6. Story Page View

f. Join Us

This page invites individuals to become part of the Lautify community. Information on how to register is provided to make it easy for new members to join. Lautify encourages collective growth and marine conservation through its platform.

g. Contact

This page provides Lautify's contact details, with the address listed as Jl. Mastrip PO BOX 164, Politeknik Negeri Jember, East Java. Website visitors can easily reach out to Lautify for inquiries, registration, or further collaboration opportunities.

h. Latest News

This page delivers news and updates related to the utilization of marine resources into high-value processed products. It highlights culinary innovations and crafts that inspire further creativity and sustainable use of marine yields.

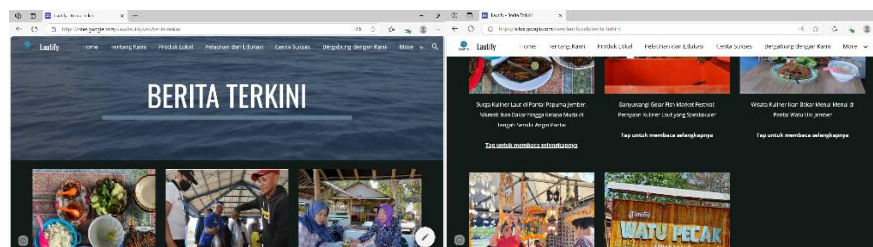


Figure 9. Breaking News View

CONCLUSION

This research demonstrates that the implementation of the Blue Economy concept in Payangan Beach, Jember Regency, holds significant potential to sustainably improve the welfare of coastal communities. Although the area is rich in marine resources, the primary challenge lies in the limited utilization of these resources, as most of them are sold in raw form without added value. Therefore, processing marine products into value-added goods such as shredded fish, fish skin crackers, and fish meal is a strategic step to enhance the local economy.

Digitalization plays a vital role in expanding the market for processed marine products. Providing training for local communities, particularly housewives and youth, in product processing, digital marketing, and financial management is essential to strengthen MSMEs in Sumberejo Village. Marketing through social media platforms such as Instagram and TikTok, along with the use of attractive designs for branding, will help boost the appeal of local products and broaden their market reach.

The implementation of Lautify, a Blue Economy based marketplace platform, offers a solution to connect coastal entrepreneurs with broader markets. This approach not only increases the income of coastal communities but also promotes sustainable development that takes environmental conservation into account. Therefore, optimizing the Blue Economy and advancing digitalization are crucial for boosting the tourism and local economic sectors in coastal areas especially Payangan Beach through environmentally friendly and sustainable strategies.

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