Blue Economy-Based Entrepreneurship Strategy in Bali: Optimizing Marine Resources for Economic Sustainability

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ABSTRACT

Bali holds significant potential for developing blue economy-based entrepreneurship to achieve economic and ecological sustainability. This exploratory qualitative research aims to analyze strategies for optimizing marine resources through sustainable entrepreneurship. Data were collected through in-depth interviews with entrepreneurs and stakeholders in Bali's coastal areas, supplemented by document analysis and observation. The findings identify potential sectors such as conservation-based marine ecotourism, seaweed aquaculture, and innovative marine product processing. However, their development is constrained by three main challenges: (1) regulatory and governance complexity leading to legal uncertainty; (2) limited access to formal financing and technology; and (3) suboptimal entrepreneurial capacity and mindset. The study concludes that a holistic strategy encompassing regulatory reform, acceleration of innovation and inclusive financing, and strengthening of value chains and local wisdom (Tri Hita Karana) is essential. Through this strategy, blue entrepreneurship can become a new, resilient, and competitive economic pillar aligned with sustainability principles in Bali.

Keywords: Blue Entrepreneurship, Blue Economy, Bali Sustainability

INTRODUCTION

Bali, with its identity as an island of the gods surrounded by sea, faces both significant challenges and opportunities in managing its marine potential. On the one hand, reliance on the conventional land-based tourism sector has proven vulnerable to shocks, as seen during the pandemic. On the other hand, abundant marine resources—from biodiversity and beautiful waters to rich maritime culture—have not been fully optimized sustainably (World Bank, 2023). In this context, there is an urgency to formulate entrepreneurial strategies that not only address economic needs but also preserve coastal and marine ecosystems. This is the essence of the blue economy , a paradigm that emphasizes the responsible, innovative, and sustainable use of marine resources to generate economic growth, social welfare, and environmental health.

Implementing blue economy principles in Bali is not merely an alternative, but a strategic imperative. Pressures from overtourism, coastal environmental degradation, and global economic competition demand the creation of new business models rooted in sustainability. Blue economy-based entrepreneurship offers a solution by encouraging the emergence of innovative businesses in various sectors, such as sustainable aquaculture, marine ecotourism, marine biotechnology, managing marine waste into economically valuable products, and even generating renewable energy from the ocean. This approach not only has the potential to diversify Bali's economy but also creates green jobs and strengthen the resilience of coastal communities (Wahyuni & Satria, 2022).

Therefore, this paper will analyze the Blue Economy-Based Entrepreneurship Strategy in Bali: Optimizing Marine Resources for Economic Sustainability. The study focuses on identifying potential marine resources that can serve as a basis for entrepreneurship development, evaluating the challenges faced (regulatory, technological, and cultural), and formulating concrete strategies to foster an inclusive and sustainable blue

entrepreneurship ecosystem. By wisely optimizing marine resources, Bali can build a more resilient economic foundation while preserving its natural and cultural heritage for future generations.

RESEARCH METHODS

This research was designed as a qualitative study with an exploratory approach to gain a deeper understanding of blue economy-based entrepreneurship development strategies in Bali. The research focused on coastal areas of Bali with direct economic activity related to marine resources, such as Badung, Klungkung, Buleleng, and Jembrana Regencies. These locations were selected considering the diverse potential and challenges faced, ranging from developed tourist areas to areas based on traditional fisheries.

The primary data collection technique was conducted through in-depth semi-structured interviews. Interviewees were selected using purposive sampling to ensure a comprehensive perspective. They comprised business actors (entrepreneurs) in the blue economy sector, such as marine ecotourism managers, seaweed farmers, sustainable seafood processing activists, and marine technology entrepreneurs. Interviews were also conducted with key stakeholders, including representatives from local governments (the Maritime Affairs and Fisheries Agency, the Tourism Agency, and the Cooperatives and SMEs Agency), academics from universities focusing on marine studies and entrepreneurship, and activists from non-governmental organizations working in marine conservation and coastal community empowerment.

To supplement the primary data, a document review and field observations were conducted. The document review included an analysis of regional regulations, regional medium-term development plans (RPJMD), statistical reports, and academic literature related to the blue economy and entrepreneurship in the Indonesian and Balinese contexts. Field observations were conducted to directly observe business operational practices, coastal ecosystem conditions, and the interaction between entrepreneurial activities and the surrounding environment and communities.

All collected data was then analyzed using thematic analysis. The analysis process began with interview transcriptions, followed by repeated readings to identify initial patterns and codes. These codes were then grouped into broader themes related to resource potential, innovative business models, barriers (regulatory, financial, technical, and socio-cultural), ecosystem support, and strategies deemed effective by stakeholders. The findings from this qualitative data analysis were then combined with those from the document review to produce a comprehensive and contextual synthesis of strategies for optimizing marine resources through entrepreneurship to achieve economic sustainability in Bali.

RESULTS AND DISCUSSION

Based on research findings, it can be identified that Bali's marine resources have a diverse potential as a basis for entrepreneurship, yet they have not been optimally utilized. Prominent sectors include conservation-based marine ecotourism (such as community-managed coral reef snorkeling and diving), sustainable seaweed farming and multispecies fisheries, non-consumptive marine product processing (such as the production of bioplastics from seaweed and cosmetics from marine materials), and supporting services such as environmental education and water quality monitoring technology. However, these entrepreneurial activities remain sporadic and have not yet formed a mutually supportive ecosystem. The majority of businesses are micro and small enterprises with limited market access and capital.

1. Potential and Growing Patterns of Blue Entrepreneurship

Emerging entrepreneurial patterns demonstrate a shift from conventional exploitation to more inclusive and regenerative models. For example, in several coastal villages, such as Nusa Penida and Amed, a *community-based ecotourism model has emerged* , where local communities collectively manage marine tourism attractions with a profit-sharing system and strict rules to limit visitor numbers. On the production side, innovations have emerged in seaweed processing businesses that not only sell dried raw materials but also develop derivative products such as dodol (sweetened sticky rice), noodles, and skincare products, thereby

increasing added value (Suratri et al., 2021). These patterns demonstrate an awareness of sustainability, even if the scale remains local.

2. Convergence Challenges: Regulation, Access, and Mindset

Research findings reveal a series of multidimensional challenges hindering the optimization of blue entrepreneurship. Challenges in regulation and governance are not merely administrative obstacles but also the root of much of the uncertainty facing blue entrepreneurship in Bali. This complexity stems from the nature of coastal and marine spaces themselves, which are *common pool resources* with multiple stakeholders and multiple regulations. Vertically, authority over coastal and marine areas is divided between the central, provincial, and district/city governments based on law (Putra & Yuliarmi, 2021). Horizontally, at the regional level, permits for marine space utilization, cultivation concessions, tourism business permits, environmental permits, and recommendations from traditional villages (*pakraman*) are often issued by different agencies or institutions, with procedures and requirements that are not always integrated.

Entrepreneurs wishing to establish a snorkeling ecotourism business, for example, must deal with the tourism office for business permits, the maritime affairs and fisheries office for location and activity permits in the waters, the environmental office for environmental impact analysis (AMDAL) or environmental management efforts (UKL) and environmental monitoring efforts (UPL), and coordinate with the local traditional village government. This process is not only time-consuming and expensive, but more crucially, it creates the potential for conflict of authority. A business may obtain a permit from one agency, only to have it rejected or revoked by another due to differing interpretations of regulations or competing interests. This creates *legal uncertainty* , which is highly detrimental, especially for start-up entrepreneurs with limited capital. This uncertainty directly impacts investor interest in this sector, as the regulatory risks are deemed too high (Iskandar & Sari, 2023).

Furthermore, this overlap is often exacerbated by the suboptimal synchronization between regional spatial planning and the dynamics of the real needs of blue entrepreneurship. The Coastal and Small Islands Zoning Plan (RZWP3K), which should serve as a guiding map, is often insufficiently detailed or not fully adopted in operational licensing. As a result, entrepreneurs often find themselves trapped in a regulatory "grey zone." Furthermore, the emergence of innovative new hybrid business models, such as conservation education tourism combined with seaweed cultivation, often does not clearly fall within the business classifications regulated by existing permits, adding to the complexity.

The implications of this challenge are serious. Many potential entrepreneurs stall in the planning phase or choose to operate informally to avoid bureaucratic red tape. While these informal operations enable businesses to survive, they are counterproductive to blue economy principles because they are difficult to monitor, monitor their sustainability, and contribute little to the formal economy. Therefore, improving regulations and governance is not an option, but rather a fundamental prerequisite for creating a conducive environment for sustainable blue entrepreneurship to grow and thrive in Bali. Without legal certainty and ease of doing business in the marine sector, all other supporting strategies —such as access to capital, training, or technology—will be less effective, operating on a fragile regulatory foundation (Grafton et al., 2020).

Challenges in access to capital and technology create a cyclical cycle, hindering the growth and scale-up of blue-chip entrepreneurship in Bali. In terms of capital, the main obstacles are structural and perceptual. Structurally, marine-based and sustainable business models often fall short of conventional collateral requirements set by banking institutions. A blue-chip entrepreneur's key assets such as local wisdom, access to community-managed waters, or knowledge of specific ecosystems are difficult to quantify and accept as collateral. Furthermore, businesses such as aquaculture or ecotourism are highly dependent on fluctuating natural conditions and have long harvest or seasonal cycles, making them considered high-risk by bank credit analysts accustomed to business models with faster and more predictable cash flows.

From a perceptual perspective, many entrepreneurs in this sector come from coastal communities with limited financial and administrative literacy. Difficulties in developing bankable business proposals, maintaining well-documented financial reports, and understanding complex financial products present significant barriers to entry into the formal financing system. Consequently, they often rely on their own capital, family loans, or

informal sources with high interest rates, severely limiting their capacity for expansion and innovation. Alternative financing schemes, such as venture capital, impact investing, or crowdfunding, which are better suited to the characteristics of high-impact businesses like these, remain largely unknown and under-utilized within the local Balinese ecosystem.

These capital constraints are directly related to the challenges of technology adoption. Without adequate capital injection, entrepreneurs struggle to adopt technologies that can improve efficiency, product quality, and competitiveness. For example, seaweed farmers still rely heavily on traditional methods that are vulnerable to disease and weather changes, while adopting long-line technology or sensor-based water quality monitoring systems remains expensive. In the ecotourism sector, developing sophisticated digital marketing platforms, integrated reservation systems, or reef-friendly snorkeling equipment requires investments beyond the reach of many small businesses.

At the same time, lack of access to technology also exacerbates capital challenges. Businesses still using conventional methods tend to have limited productivity and profit margins, making them increasingly unattractive to lenders. They are trapped in a vicious cycle where low productivity due to simple technology makes it difficult to obtain capital, and this capital shortage ultimately hinders technological advancement. Technology is more than just a tool; it also acts as an enabler for opening new markets and creating added value. Without the adoption of technology in processing, for example, seafood will remain as low-priced raw commodities. Innovation to create high-value derivative products—such as cosmetic extracts from seaweed or biodegradable packaging from marine materials—is only possible with the support of adequate processing technology, which again requires significant capital (EIU, 2022).

Therefore, addressing these challenges requires an integrated approach that not only provides alternative financing channels but also builds capacity and provides affordable technological infrastructure. Without deliberate intervention to break the link between capital and technology limitations, blue entrepreneurship in Bali will continue to operate at a subsistence level, struggling to transform the potential of abundant marine resources into a competitive and sustainable economic force.

Conventional banking financing schemes are often incompatible with marine-based business models, which have specific production cycles and high risks. Adoption of technology to increase productivity and efficiency (such as processing technology or monitoring systems) is also hampered by costs and technical capabilities. Third, there are mindset and capacity challenges **.** The work ethic remains stronger than the entrepreneurial spirit in many coastal communities. Furthermore, managerial capacity, digital marketing, and product innovation still need significant improvement.

3. Optimization Strategy: Building a Holistic Blue Entrepreneurship Ecosystem

The discussion of the above findings points to the need for an integrated and holistic strategy. This strategy should not only focus on individual entrepreneurs but also on building a supportive ecosystem (Firmansyah et al., 2022).

- Strengthening Supportive Institutions and Regulations: A clear and simple regulatory framework is needed, such as a specific Regional Regulation that encourages investment and innovation in the blue economy sector. Closer synergy between the maritime affairs, tourism, cooperatives-SMEs, and environmental agencies needs to be realized through the formation of blue economy *task forces* or clusters at the district level. This will streamline the licensing process and coordinate mentoring programs.
- Accelerating Innovation and Accessing Resources: Local governments can act as *hubs* connecting entrepreneurs with alternative funding sources, such as grants, social impact *venture capital , or crowdfunding* schemes . Partnerships with universities and research institutions are crucial for technology transfer, product development, and improving human resource quality through applicable training.
- Sustainable Market and Value Chain Development: Digital-based collective marketing strategies and sustainability certifications (such as ecolabels) need to be promoted to build a "Bali Blue Economy"

brand with added value and high competitiveness. Strengthening the upstream to downstream value chain—from seed supply and environmentally friendly production processes to marketing—will create a more resilient and profitable circular economy for all stakeholders.

- Internalization of Local Wisdom Values (Tri Hita Karana): This strategy will find its leverage if it is rooted in Balinese local wisdom, namely the *Tri Hita Karana* philosophy (harmony with God, humanity, and nature). Successful blue entrepreneurship should be seen as a manifestation of this philosophy, where economic activities are inseparable from spiritual, social, and ecological responsibilities. This approach can be a differentiator and a strong motivational basis for local community involvement.

CONCLUSION

This study concludes that developing blue economy-based entrepreneurship in Bali is a strategic necessity for building sustainable economic resilience. The abundant potential of marine resources, ranging from marine ecotourism and sustainable aquaculture to marine biotechnology, has given rise to various innovative and conservation-oriented entrepreneurial initiatives. Patterns such as *community-based ecotourism* and value-added seafood processing demonstrate a paradigm shift toward more responsible and inclusive utilization.

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