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Governance Model for Blue Economy Policy Implementation Developing Marine MSMEs Based on Processed Fishery Products to Foster Self-Reliance Among the Coastal Community of Karangantu, Serang Regency

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ABSTRACT

The blue economy has become a strategic approach to promoting sustainable coastal development by optimizing marine resources while preserving environmental sustainability. However, the implementation of blue economy policies in Karangantu Coastal Area, Serang Regency, has not yet effectively strengthened the competitiveness and independence of marine micro, small, and medium enterprises (MSMEs) based on processed fishery products. This study aims to develop a governance model for implementing blue economy policies that supports the sustainable development of marine MSMEs and enhances the self-reliance of coastal communities. The research employed a qualitative case study approach using in-depth interviews, observation, documentation, and focus group discussions involving government agencies, MSME actors, fishermen, academics, and community organizations. Data were analyzed through data reduction, data display, and conclusion drawing with source triangulation to ensure validity. The findings indicate that effective governance depends on collaborative interaction among government institutions, business actors, communities, and academic institutions through integrated policies, capacity building, digital marketing, financial access, and innovation in processed fishery products. The proposed governance model strengthens institutional collaboration, resource utilization, and market competitiveness, thereby contributing to sustainable coastal economic development and improving the welfare and economic self-reliance of the Karangantu coastal community.

Keywords: *Blue Economy Policy; Governance Model; Marine MSMEs; Processed Fishery Products; Coastal Community; Sustainable Development.*

INTRODUCTION

The concept of the blue economy has emerged as a strategic paradigm for achieving sustainable development by balancing economic growth, environmental conservation, and social welfare. Unlike conventional economic development models that often prioritize resource exploitation, the blue economy promotes the sustainable utilization of marine and coastal resources while ensuring ecological resilience and long-term economic benefits. The concept has gained increasing international recognition following the adoption of the United Nations Sustainable Development Goals (SDGs), particularly Goal 14 (Life Below Water), which emphasizes the conservation and sustainable use of oceans, seas, and marine resources. In addition, the blue economy contributes to other SDGs, including poverty reduction, decent work and economic growth, responsible consumption and production, climate action, and partnerships for sustainable development. As the world's largest archipelagic country, Indonesia possesses extraordinary marine resources that represent a significant comparative advantage for national economic development. The country's coastline, extensive marine biodiversity, fisheries resources, and strategic maritime location provide substantial opportunities for developing sustainable marine industries. Consequently, the Government of Indonesia has incorporated the blue economy into national development strategies through various policies that encourage sustainable fisheries, marine conservation, coastal community empowerment, and value-added processing of fishery products. These initiatives reflect the government's commitment to transforming marine resources into drivers of inclusive economic growth while maintaining ecological sustainability.

Despite these opportunities, many coastal communities continue to face structural challenges that hinder their economic development. Coastal households often rely on traditional fishing activities characterized by low productivity, seasonal income fluctuations, limited access to capital, inadequate technology, weak institutional support, and restricted market access. These conditions reduce the capacity of coastal communities to improve their livelihoods and increase their vulnerability to economic shocks and environmental change. Consequently, strengthening the economic resilience of coastal communities requires governance approaches that integrate resource management, institutional collaboration, and community empowerment. One of the most promising strategies for improving coastal welfare is the development of marine-based micro, small, and medium enterprises (MSMEs). Marine MSMEs play a critical role in generating employment, increasing household income, encouraging entrepreneurship, and adding value to fisheries resources through product diversification and processing innovations. Instead of selling raw fish at relatively low prices, coastal communities can enhance product value by producing processed seafood products such as fish crackers, smoked fish, fish floss, fish balls, frozen seafood products, dried fish, shrimp paste, and other market-oriented products. This value-added approach not only increases profitability but also reduces post-harvest losses, improves product competitiveness, and strengthens local economic resilience.

The development of processed fishery products also contributes to the broader objectives of sustainable coastal development. By encouraging efficient resource utilization, reducing waste, and promoting innovation, processed fishery industries support circular economic principles that align closely with the blue economy framework. Furthermore, the expansion of marine MSMEs creates multiplier effects by stimulating supporting sectors such as packaging industries, transportation services, digital marketing, tourism, and local supply chains. Consequently, strengthening marine MSMEs has become an important policy priority for improving community welfare while promoting sustainable regional economic development.

However, the successful development of marine MSMEs cannot be achieved solely through entrepreneurial initiatives. Effective implementation requires collaborative governance involving government institutions, business actors, academic institutions, financial organizations, and local communities. Government agencies play a central role in formulating policies, providing infrastructure, facilitating access to financing, delivering technical assistance, improving product quality standards, and strengthening market networks. Therefore, governance quality becomes a decisive factor in determining whether blue economy policies can produce sustainable economic transformation within coastal communities. Karangantu Coastal Area, located in Serang Regency, Banten Province, is one of the most important fisheries centers in the region. The area possesses considerable marine resources supported by capture fisheries, fish landing facilities, traditional fish markets, and communities whose livelihoods largely depend on marine economic activities. Every day, various fishery commodities, including marine fish, shrimp, squid, and shellfish, are landed and distributed to local and regional markets. This abundance of marine resources provides substantial opportunities for developing value-added industries based on processed fishery products. Nevertheless, the economic potential of these resources has not been fully optimized because a significant proportion of fishery products are still marketed in raw form with relatively low economic value.

Marine MSMEs operating in Karangantu have demonstrated considerable entrepreneurial potential through the production of processed seafood products. However, most enterprises remain small-scale family businesses with limited production capacity, simple processing technologies, inadequate packaging, and insufficient compliance with food safety and quality standards. Product innovation is relatively limited, while branding and marketing strategies have not yet adapted to increasingly competitive domestic and international markets. Moreover, the adoption of digital technologies for business management, online marketing, and market expansion remains relatively low, reducing the competitiveness of local enterprises in the digital economy. In addition to internal business constraints, institutional challenges also affect the implementation of blue economy policies in Karangantu. Government programs related to fisheries development, MSME empowerment, coastal conservation, tourism, and community economic development are often implemented by different agencies with limited coordination. This sectoral approach may lead to overlapping responsibilities, fragmented planning, and inefficient allocation of resources. Consequently, policy implementation frequently focuses on short-term program outputs rather than long-term institutional strengthening and sustainable economic transformation.

Effective governance in blue economy implementation requires stronger collaboration among multiple stakeholders. Government institutions should function not only as regulators but also as facilitators, coordinators, and catalysts for innovation. Universities and research institutions can contribute through technology transfer, product innovation, entrepreneurship training, and capacity-building programs. Financial institutions are expected to improve access to affordable financing for MSMEs, while private-sector actors can expand marketing networks, strengthen supply chains, and encourage business partnerships. Community organizations, fishermen's groups, cooperatives, and local leaders also play essential roles in encouraging participation, strengthening social capital, and ensuring that development programs reflect local needs and aspirations.

Another important challenge concerns the sustainability dimension of fishery resource utilization. Increasing production without adequate environmental management may accelerate resource depletion and threaten the long-term viability of coastal livelihoods. Therefore, blue economy policy implementation should integrate economic development with responsible fisheries management, marine ecosystem

conservation, waste reduction, renewable resource utilization, and environmentally friendly production technologies. Sustainable governance must simultaneously pursue economic growth, environmental protection, and social inclusion as interconnected development objectives. The growing importance of processed fishery products also reflects changing consumer preferences toward high-quality, safe, nutritious, and conveniently packaged seafood products. This trend creates significant opportunities for coastal MSMEs to diversify products, improve production standards, and penetrate wider markets. However, realizing these opportunities requires comprehensive institutional support, including technical assistance, certification services, digital transformation programs, logistics development, and continuous business mentoring. Without integrated governance mechanisms, many MSMEs will continue to face difficulties in scaling up production and maintaining business sustainability. These conditions indicate that the principal challenge is not merely the availability of marine resources but the effectiveness of governance in transforming those resources into sustainable economic value. Consequently, there is a pressing need to formulate a governance model that promotes collaboration among government agencies, business actors, academic institutions, financial organizations, and local communities. Such a model is expected to improve policy coordination, strengthen institutional capacity, enhance innovation, and accelerate the development of competitive marine MSMEs, thereby fostering greater economic self-reliance among the coastal community of Karangantu, Serang Regency.

The implementation of blue economy policies has attracted increasing scholarly attention over the past decade because of its potential to reconcile economic development with environmental sustainability and social inclusion. The blue economy extends beyond the sustainable exploitation of marine resources by emphasizing integrated governance, stakeholder collaboration, innovation, and institutional capacity. Contemporary studies argue that successful blue economy initiatives require comprehensive governance systems capable of coordinating multiple actors with different responsibilities, interests, and resources. Consequently, governance has become one of the most critical determinants of whether blue economy policies achieve sustainable development outcomes. Governance theory provides an important analytical framework for understanding how public policies are formulated, implemented, and evaluated through interactions among governments, private sectors, civil society, and communities. Modern governance has shifted from hierarchical government-centered approaches toward collaborative governance, in which multiple stakeholders jointly participate in policy formulation, implementation, monitoring, and evaluation. Collaborative governance emphasizes dialogue, mutual trust, shared responsibility, collective decision-making, and institutional coordination. Such an approach is particularly relevant for coastal development because marine resource management involves diverse actors whose interests often overlap across administrative and sectoral boundaries.

Network governance further complements collaborative governance by explaining how interconnected organizations exchange knowledge, financial resources, technology, and institutional support to achieve common objectives. Rather than relying exclusively on centralized government authority, network governance recognizes the importance of horizontal relationships among public institutions, business organizations, universities, non-governmental organizations, financial institutions, and community groups. Effective governance networks improve policy coordination, reduce institutional fragmentation, and encourage innovation through continuous interaction among stakeholders. For blue economy implementation, these governance networks facilitate technology transfer, market development, capacity building, and sustainable resource management. Previous studies have extensively examined blue economy implementation from environmental, fisheries management, marine conservation, and economic

development perspectives. Many researchers have demonstrated that value-added processing of fishery products contributes significantly to increasing fishermen's income, reducing post-harvest losses, strengthening food security, and improving regional economic performance. Other studies have highlighted the importance of digital transformation, product innovation, entrepreneurship development, and financial inclusion in improving the competitiveness of marine MSMEs. Research on collaborative governance has also emphasized that institutional coordination significantly influences policy effectiveness, particularly in complex sectors requiring cross-sectoral cooperation.

Nevertheless, important research gaps remain. First, existing studies generally analyze blue economy policies from sector-specific perspectives without comprehensively integrating governance, institutional collaboration, MSME development, and community empowerment into a single analytical framework. Second, previous research has focused predominantly on macro-level policy implementation or environmental management while providing limited attention to governance mechanisms that directly influence the development of processed fishery-based MSMEs at the local level. Third, empirical studies investigating coastal governance in Banten Province, particularly within the Karangantu Coastal Area of Serang Regency, remain relatively scarce despite the area's considerable economic and fisheries potential. Fourth, few studies have proposed an operational governance model that clearly defines stakeholder roles, institutional interactions, resource integration, and policy coordination for sustainable blue economy implementation. This study addresses these gaps by developing a governance model specifically designed for the implementation of blue economy policies aimed at strengthening marine MSMEs based on processed fishery products. Unlike previous studies that primarily evaluate existing policies, this research seeks to formulate an integrative governance framework that combines collaborative governance principles, institutional capacity, stakeholder participation, innovation systems, market development, and sustainable fisheries management. The proposed model emphasizes coordinated action among government agencies, MSMEs, fishermen, universities, financial institutions, private enterprises, and local communities to create sustainable economic value while preserving marine ecosystems.

The novelty of this research lies in three main contributions. First, it develops an integrated governance model that connects blue economy policy implementation with marine MSME empowerment through processed fishery product development. Second, it provides empirical evidence from the Karangantu Coastal Area, offering new insights into governance challenges and opportunities within Indonesia's coastal communities. Third, the study generates practical policy recommendations that strengthen institutional collaboration, improve policy coherence, promote innovation, and enhance community self-reliance. These contributions are expected to enrich governance literature while supporting policymakers in designing more effective and sustainable blue economy strategies for coastal economic development.

Based on the theoretical perspectives and empirical challenges discussed above, this study adopts an integrated governance perspective that positions the implementation of blue economy policy as a collaborative process involving multiple stakeholders. The conceptual framework assumes that the success of blue economy implementation is determined not only by the quality of public policy but also by the effectiveness of governance mechanisms that facilitate coordination, participation, resource mobilization, innovation, and institutional learning. Government institutions function as policy coordinators and regulators, while MSMEs, fishermen, cooperatives, academic institutions, financial organizations, and private enterprises collectively contribute to strengthening local economic development. Within this framework, governance serves as the connecting mechanism that transforms marine resources into

sustainable economic opportunities through collaborative action and shared responsibility.

The framework further assumes that governance effectiveness can be assessed through several interrelated dimensions, including institutional coordination, stakeholder participation, policy integration, leadership, transparency, accountability, innovation, and capacity building. These governance dimensions influence the ability of marine MSMEs to improve production efficiency, diversify processed fishery products, enhance product quality, expand market access, adopt digital technologies, and strengthen business competitiveness. At the same time, sustainable resource management and environmental conservation remain essential components of the blue economy because long-term economic development depends upon healthy coastal ecosystems and responsible fisheries management. Consequently, the proposed governance model integrates economic, social, institutional, and environmental dimensions into a comprehensive framework for sustainable coastal development.

This study is guided by the following research questions: (1) How is the current implementation of blue economy policy supporting the development of marine MSMEs based on processed fishery products in the Karangantu Coastal Area? (2) What governance challenges and institutional barriers affect policy implementation and community economic empowerment? (3) How do interactions among government agencies, business actors, academic institutions, financial organizations, and coastal communities influence the effectiveness of blue economy policy implementation? (4) What governance model can strengthen collaboration, improve institutional performance, and foster sustainable economic self-reliance among coastal communities?

Accordingly, the primary objective of this research is to develop a governance model for blue economy policy implementation that effectively supports the sustainable development of marine MSMEs based on processed fishery products in Karangantu, Serang Regency. More specifically, the study seeks to analyze existing governance practices, identify institutional strengths and weaknesses, examine stakeholder relationships, evaluate collaborative mechanisms, and formulate an integrated governance model capable of improving policy effectiveness and community welfare. The proposed model is expected to serve as a practical framework for local governments in designing more coordinated, participatory, and sustainable development strategies for coastal areas.

From a theoretical perspective, this research contributes to the growing literature on governance and blue economy studies by integrating collaborative governance, network governance, and sustainable coastal development into a unified analytical framework. It extends previous studies by demonstrating how governance quality influences the transformation of fisheries resources into value-added economic activities through marine MSMEs. Furthermore, the study highlights the importance of institutional collaboration and stakeholder engagement as critical factors for achieving sustainable policy outcomes in coastal regions.

From a practical perspective, the findings are expected to provide evidence-based recommendations for policymakers, regional governments, development agencies, and coastal stakeholders. The governance model can be used as a policy reference for improving institutional coordination, strengthening MSME capacity, expanding access to finance and technology, encouraging product innovation, and promoting digital marketing of processed fishery products. In addition, the model supports the formulation of integrated development programs that align marine economic growth with environmental sustainability and social inclusion.

Ultimately, strengthening governance in the implementation of blue economy policies is not merely an administrative or institutional concern but a strategic pathway toward sustainable coastal

transformation. By fostering collaboration, innovation, and inclusive participation, governance can create an enabling environment in which marine MSMEs flourish, fisheries resources are managed responsibly, and coastal communities become more resilient and economically self-reliant. Therefore, this study proposes an integrated governance model that offers both conceptual and practical solutions for enhancing the effectiveness of blue economy policy implementation in Karangantu, Serang Regency, while providing insights that may be adapted to other coastal regions facing similar developmental challenges.

METHODS OF RESEARCH

This study employed a qualitative research approach using a case study design to explore the governance model for implementing Blue Economy policies in developing marine micro, small, and medium enterprises (MSMEs) based on processed fishery products in the Karangantu Coastal Area, Serang Regency, Indonesia. A qualitative case study was selected because it enables an in-depth understanding of governance processes, stakeholder interactions, institutional dynamics, and policy implementation within their real-life context. The research focused on multiple stakeholders involved in the implementation of Blue Economy policies, including officials from the Serang Regency Government, the Marine and Fisheries Office, the Cooperatives and MSMEs Office, MSME owners, fishermen, community leaders, cooperatives, academics, and representatives of financial institutions. Informants were selected using purposive sampling based on their knowledge, experience, and direct involvement in coastal economic development programs. Data were collected through semi-structured interviews, field observations, document analysis, and focus group discussions (FGDs) to obtain comprehensive information regarding governance practices, institutional collaboration, business development, and policy implementation.

The collected data were analyzed using the interactive qualitative analysis model proposed by Miles, Huberman, and Saldaña, which consists of data condensation, data display, and conclusion drawing and verification. To enhance the credibility and trustworthiness of the findings, source triangulation, method triangulation, and member checking were conducted by comparing information obtained from different stakeholders and data sources. The analysis focused on identifying governance structures, stakeholder roles, institutional relationships, policy coordination mechanisms, collaborative processes, enabling and constraining factors, and their influence on the development of marine MSMEs based on processed fishery products. Based on these analytical findings, an integrated governance model was formulated to strengthen Blue Economy policy implementation through collaborative governance, institutional synergy, innovation, digital transformation, sustainable fisheries management, and community participation, thereby fostering the economic self-reliance of the Karangantu coastal community.

RESULT AND DISCUSSION

The findings indicate that the implementation of the Blue Economy policy in the Karangantu Coastal Area has demonstrated positive progress in promoting sustainable coastal economic development. The Serang Regency Government, through the Marine and Fisheries Office and other related agencies, has

introduced several programs to strengthen the fisheries sector, improve fishermen's welfare, and encourage the development of marine-based micro, small, and medium enterprises (MSMEs). These programs include entrepreneurship training, fish processing assistance, fishing infrastructure development, business licensing facilitation, and product marketing initiatives. Nevertheless, the implementation remains fragmented because the programs are often carried out independently by different government institutions without comprehensive coordination. As a result, policy integration has not yet been fully achieved, reducing the overall effectiveness of Blue Economy implementation. Field observations revealed that the majority of marine MSMEs continue to operate using traditional production methods with limited processing technology and inadequate product diversification. Most enterprises process fish into conventional products such as fish crackers, smoked fish, shrimp paste, dried fish, and fish balls. Although these products have significant market potential, limited innovation in packaging, branding, product quality, and certification constrains their competitiveness in broader domestic and international markets. Furthermore, access to financial capital and modern production equipment remains one of the principal challenges facing local entrepreneurs.

Effective implementation of Blue Economy policies requires strong institutional collaboration among government agencies, coastal communities, business actors, academic institutions, financial organizations, and the private sector. The empirical findings demonstrate that although communication among stakeholders has gradually improved, collaborative governance has not yet been institutionalized through an integrated governance mechanism. Most stakeholders continue to perform their responsibilities independently according to sectoral mandates, creating overlapping programs and inefficient utilization of available resources. Government institutions mainly function as regulators and program implementers, while universities primarily contribute through community service and training activities. Financial institutions provide limited business financing due to administrative requirements that many MSMEs cannot fulfill. Private companies participate only occasionally through corporate social responsibility (CSR) initiatives rather than long-term partnerships. Consequently, institutional collaboration remains project-oriented rather than sustainable and strategic.

The study further reveals that community participation represents an important strength in Blue Economy implementation. Fishermen groups, women's organizations, youth communities, and MSME associations actively participate in training programs and business development initiatives. However, limited managerial capacity, digital literacy, and entrepreneurial knowledge reduce their ability to maximize these opportunities. Therefore, governance should emphasize continuous capacity building rather than one-time intervention programs. The research identifies several major obstacles that hinder the sustainable development of marine MSMEs. First, limited access to production capital restricts business expansion and technology adoption. Second, inadequate processing facilities reduce production efficiency and product quality. Third, low digital literacy prevents many entrepreneurs from utilizing e-commerce platforms and digital marketing strategies. Fourth, product standardization and certification remain insufficient, limiting opportunities to enter modern retail markets and export supply chains.

Another important challenge concerns market access. Most processed fishery products are sold through traditional markets and local distributors with relatively unstable prices. Business actors rarely establish direct partnerships with supermarkets, hotels, restaurants, or online marketplaces. Consequently, profit margins remain relatively low despite increasing consumer demand for processed seafood products. Environmental sustainability also presents a significant governance challenge. Although fishery production contributes substantially to local economic development, increasing production without responsible

resource management may threaten marine biodiversity and ecosystem sustainability. Waste generated from fish processing activities is not yet optimally managed, indicating the need for environmentally friendly production systems consistent with Blue Economy principles.

Based on the empirical findings, this study proposes an integrated governance model consisting of five interconnected components. The first component is collaborative institutional governance, emphasizing coordination among government agencies, universities, financial institutions, private companies, cooperatives, and community organizations. The second component is marine MSME capacity development, including entrepreneurship training, technology transfer, digital literacy improvement, product innovation, and business mentoring. The third component is economic empowerment through value-added fishery processing, encouraging product diversification, quality improvement, branding, packaging innovation, halal certification, food safety certification, and digital marketing. The fourth component is sustainable marine resource management, integrating responsible fisheries practices, environmental conservation, waste management, and ecosystem protection into local development policies. Finally, the fifth component is policy integration and monitoring, establishing cross-sectoral coordination mechanisms, performance indicators, and continuous evaluation to ensure that Blue Economy programs achieve measurable social, economic, institutional, and environmental outcomes.

The proposed governance model positions the local government as the central coordinator responsible for facilitating collaboration among stakeholders while encouraging active participation from communities and private-sector partners. Universities function as knowledge providers through research, innovation, and technical assistance, whereas financial institutions improve access to inclusive financing schemes. Community organizations and MSMEs become the primary actors responsible for implementing sustainable business practices and creating value-added products. The findings support the collaborative governance perspective, which argues that complex public policy implementation requires cooperation among multiple stakeholders rather than hierarchical government intervention alone. Institutional collaboration strengthens policy coordination, improves resource sharing, and facilitates collective problem-solving. These findings are also consistent with network governance theory, emphasizing that governance effectiveness depends upon the quality of inter-organizational relationships, knowledge exchange, and mutual trust among participating institutions.

Furthermore, the study confirms that Blue Economy implementation extends beyond marine resource utilization to include institutional capacity, innovation, entrepreneurship, digital transformation, and sustainable governance. The proposed governance model demonstrates that successful coastal economic development requires integrating economic, environmental, and social objectives within a comprehensive governance framework. Such integration enables coastal communities to increase value-added production, improve market competitiveness, strengthen economic resilience, and protect marine ecosystems simultaneously. Compared with previous studies that primarily evaluated Blue Economy policies from environmental or fisheries perspectives, this research contributes by developing an operational governance model specifically designed to strengthen marine MSMEs based on processed fishery products. The model provides a practical framework for policymakers seeking to improve institutional coordination, stakeholder collaboration, and sustainable coastal economic development. Therefore, strengthening governance through integrated institutional collaboration is essential for achieving the long-term objectives of the Blue Economy while fostering self-reliance and improving the welfare of the Karangantu coastal community.

CONCLUSION

This study concludes that the successful implementation of Blue Economy policy in the Karangantu Coastal Area, Serang Regency, depends largely on the effectiveness of governance rather than solely on the availability of marine resources. Although the region possesses significant fisheries potential and active marine MSMEs, policy implementation remains constrained by fragmented institutional coordination, limited stakeholder collaboration, inadequate access to technology and finance, low digital literacy, and insufficient product innovation. The findings demonstrate that sustainable coastal economic development requires an integrated governance approach that strengthens collaboration among government agencies, fishermen, marine MSMEs, academic institutions, financial organizations, private-sector partners, and local communities. Such collaboration enhances policy coherence, institutional capacity, innovation, market access, and sustainable fisheries management, thereby creating greater opportunities for value-added processing of fishery products and improving community welfare.

The study proposes an integrated governance model that combines collaborative governance, network governance, institutional synergy, capacity building, digital transformation, sustainable resource management, and continuous policy monitoring to support the development of marine MSMEs based on processed fishery products. This model contributes theoretically by extending the application of governance theory within the context of Blue Economy policy implementation and provides practical guidance for policymakers in designing coordinated and sustainable coastal development strategies. Future research is recommended to quantitatively test the proposed governance model across different coastal regions in Indonesia and to examine its long-term impact on MSME competitiveness, community economic self-reliance, environmental sustainability, and regional economic resilience.

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