
THE BLUE-HALAL-REGIONAL NEXUS: A MODEL FOR SUSTAINABLE ARCHIPELAGIC DEVELOPMENT IN THE BANGKA BELITUNG ISLANDS

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Abstract

This study examines the interaction between blue economy development, regional economic transformation, and Islamic economic principles in shaping sustainable growth in the Bangka Belitung Islands. Using a qualitative-descriptive approach supported by GRDP data from 2020–2024 and policy documents from BPS, KKP, BI, and KNEKS, the analysis highlights how the province is transitioning from a mining-dependent economy to a more diversified maritime system. The findings show that key blue economy sectors, fisheries, manufacturing, maritime logistics, and tourism, exhibit stronger growth and resilience compared to mining, particularly during the post-pandemic recovery period. These sectors collectively contribute approximately 35% of the province's GRDP, with absolute values rising significantly from IDR 54.65 trillion in 2020 to 75.77 trillion in 2024, indicating deepening structural integration of ocean-based economic activities. In parallel, Islamic economic instruments play an increasingly vital role in supporting inclusive and ethical development. Mechanisms such as *mudarabah*, *musharakah*, *qardhul hasan*, and productive waqf have expanded financing access for coastal MSMEs, strengthened micro-level resilience, and facilitated value-added activities in fisheries, processing industries, and marine tourism. These practices align with *maqasid al-shariah* principles, ensuring that economic growth is pursued alongside social justice and environmental responsibility. The integration of blue economy strategies and Islamic economic ethics forms a coherent framework for sustainable regional development. This research proposes the "Blue-Halal-Regional Nexus" as a conceptual model that synthesizes environmental stewardship, inclusive finance, and spatial competitiveness. The study's findings offer important insights for policymakers seeking to accelerate structural transformation and build resilient archipelagic economies in Indonesia and beyond.

Keywords: *Blue Economy, Islamic Economics, Regional Development, Sustainable Archipelagic Growth, Nexus Model.*

A. INTRODUCTION

The Bangka Belitung Islands Province occupies a unique position within Indonesia's archipelagic economic landscape, characterized by abundant marine resources, coastal biodiversity, and a strong historical dependence on tin mining. For decades, the mining sector shaped regional output and employment, positioning the

province as one of the country's primary contributors to tin production. However, structural limitations of extractive-based development – including declining mineral reserves, high environmental externalities, and vulnerability to global price fluctuations – have increasingly demonstrated the need for a more resilient and sustainable economic model. These conditions align with broader national and global imperatives emphasizing ecological stewardship, diversification, and long-term competitiveness.

In recent years, the provincial development agenda has shifted toward the blue economy, a framework promoting sustainable utilization of ocean and coastal resources through fisheries, aquaculture, maritime logistics, and marine tourism. Global institutions, including the World Bank and ASEAN, highlight the blue economy as a strategic pathway for archipelagic regions to enhance value creation while maintaining ecological balance. For Bangka Belitung, whose spatial structure and socio-economic activities are inherently maritime, this framework offers a feasible and future-oriented direction for economic transformation.

Parallel to this shift is the growing relevance of Islamic economics as a normative and institutional foundation for inclusive development. Grounded in *maqasid al-shariah*, Islamic economics promotes justice, ethical conduct, and the protection of resources. Sharia-compliant financial instruments, such as *mudharabah*, *musharakah*, *qardhul hasan*, and productive waqf, have expanded financial inclusion for coastal communities and MSMEs – groups that are often marginalized in conventional financial systems. These mechanisms support risk-sharing, reduce socio-economic disparities, and empower local enterprises within the maritime value chain.

The intersection of the blue economy and Islamic economic principles forms a comprehensive framework for sustainable regional development. This study examines the sectoral transformation of Bangka Belitung from 2020 to 2024, evaluates the contribution of blue-economy-related sectors to GRDP, and analyzes the role of Islamic finance in strengthening regional resilience. The findings aim to establish the conceptual and empirical foundations of the “Blue-Halal-Regional Nexus” as a strategic model for Indonesia's coastal and island regions.

Despite the growing number of studies on blue economy development and Islamic finance in Indonesia, research integrating these two paradigms within the context of regional economic transformation remains limited. Existing literature tends to examine maritime development or Sharia-based financial inclusion separately, without exploring how their interaction can support structural diversification in small island economies. Moreover, empirical evidence from the Bangka Belitung Islands – a province undergoing a shift from extractive dependence to maritime-led growth – is still scarce. This study addresses this gap by proposing the Blue-Halal-Regional Nexus as an integrated conceptual model and by providing a five-year analysis of sectoral performance, blue economy contributions, and Islamic finance empowerment in the archipelagic context.

B. LITERATURE REVIEW

1. Blue Economy

The blue economy refers to the sustainable use of marine and coastal resources for economic growth, livelihood improvement, and ecosystem health (World Bank,

2017). For archipelagic regions such as Bangka Belitung, this includes fisheries, aquaculture, maritime logistics, marine tourism, and coastal resource conservation. As noted by Bennett et al. (2019), sustainable blue economy development requires balancing ecological integrity, community welfare, and long-term economic value.

2. Islamic Economics

Islamic economics emphasizes principles of *maqasid al-shariah*, ensuring justice, welfare, and ethical behavior. Instruments such as *mudarabah*, *musharakah*, *qardhul hasan*, and waqf productive support inclusive and equitable financing –critical for microenterprises in coastal areas (Chapra, 2008; KNEKS, 2023).

3. Regional Development

Regional economic development theories highlight competitiveness, innovation, and spatial interconnectedness (Todaro & Smith, 2020). For island economies, diversification and connectivity are essential to reduce dependence on extractive industries and mitigate external shocks.

4. Nexus Theory

Nexus theory provides a conceptual basis for understanding the interconnectedness of multiple systems that jointly influence development outcomes. In academic literature, the term “nexus” has been widely used to describe integrated relationships, such as the Water–Energy–Food (WEF) Nexus and the Trade–Environment Nexus, where cross-sectoral interactions shape sustainability and resilience (Cairns & Krzywoszynska, 2016; Hoff, 2011).

The nexus approach emphasizes that sectors do not operate in isolation but are interdependent, mutually reinforcing, and often governed by shared constraints and opportunities. In the context of regional development, a nexus framework enables policymakers to coordinate interventions across economic, social, and environmental dimensions, thus reducing trade-offs and enhancing system-level outcomes. This study adopts the nexus perspective to conceptualize the interaction between blue economy strategies, Islamic economic ethics, and regional competitiveness –forming what is termed the “Blue-Halal–Regional Nexus.” This integrated lens allows analysis of how sustainable maritime practices, Sharia-compliant financial mechanisms, and spatial economic advantages collectively strengthen structural transformation in the Bangka Belitung Islands. Recent nexus scholarship also highlights the importance of cross-sectoral coordination for sustainability outcomes (Pahl-Wostl, 2019).

C. METHOD

This study employs a qualitative–descriptive research design supported by quantitative sectoral analysis to examine the transformation of the Bangka Belitung economy from 2020 to 2024. The methodology integrates economic structure assessment, blue economy contribution analysis, and evaluation of Islamic financial instruments in regional development. The selection of the 2020–2024 period is methodologically significant because it captures both the shock of the COVID-19 pandemic and the subsequent recovery phase, allowing a more comprehensive analysis of structural transformation in the Bangka Belitung economy. This five-year

window provides a consistent and comparable dataset to observe how key sectors behaved under conditions of crisis, rebound, and stabilization. It also aligns with national and provincial planning cycles, ensuring relevance to current policy frameworks.

The decision to focus on five major sectors, Agriculture, Forestry and Fisheries (A); Mining and Quarrying (B); Manufacturing (C); Transportation and Warehousing (H); and Accommodation and Food Services (I) – is grounded in their strategic role within the regional economic structure. Sectors A, C, H, and I are central components of the blue economy and represent the province’s maritime potential, while sector B serves as the historical backbone of Bangka Belitung’s extractive economy. Including mining provides a critical point of comparison to evaluate the extent of post-extractive diversification. These sectors collectively account for a substantial share of total GRDP and exhibit clear patterns of growth, resilience, and value-chain development, making them analytically appropriate for assessing the dynamics of structural transformation and the implications of the Blue-Halal-Regional Nexus model.

The research utilizes secondary data drawn from:

1. BPS (Statistics Indonesia): GRDP by sector (ADHB) for 2020–2024, implicit growth rates, and sectoral YoY performance.
2. KKP (Ministry of Marine Affairs and Fisheries): Blue economy policy frameworks and fisheries sector programs.
3. KNEKS & Bank Indonesia: Islamic finance instruments, MSME empowerment programs, and regulatory documents.
4. Regional Development Planning Documents (RPJMD, RENSTRA OPD): Strategic directions of Bangka Belitung’s economic development.

The analysis proceeds in three major stages:

1. Sectoral Structure and Growth Analysis

GRDP data were examined to identify trends in five key sectors – Agriculture (A), Mining (B), Manufacturing (C), Transportation (H), and Accommodation/Food Service (I). Year-on-year (YoY) growth rates and absolute changes were calculated to assess sectoral dynamics. Structural transformation was evaluated through shifts in proportional contributions across sectors.

2. Blue Economy Contribution Calculation

Blue economy value was quantified using the aggregated GRDP of sectors A+C+H+I. The *Blue Economy Share* was calculated as:

$$\text{Blue Share (\%)} = \frac{\text{GRDP}_{A+C+H+I}}{\text{Total GRDP}} \times 100$$

This measure allows tracking of blue economy integration into the regional structure across the five-year period.

3. Islamic Economics Assessment

The role of Islamic finance was analyzed using a qualitative institutional approach, focusing on the contribution of BMTs, ZISWAF programs, and *waqf productive* schemes to coastal MSMEs. Documentary analysis and theoretical mapping were used to align these instruments with the principles of *maqasid al-shariah* and sustainable development.

The final analytical step synthesizes economic, spatial, and ethical dimensions to formulate the Blue-Halal-Regional Nexus as an integrated conceptual model for sustainable archipelagic development.

D. RESULT AND DISCUSSION

1. Structural Transformation of the Regional Economy

The economic structure of the Bangka Belitung Islands has undergone notable transformation during 2020–2024. The GRDP at current prices increased from IDR 150.38 trillion (2020) to IDR 214.02 trillion (2024), reflecting a strong post-pandemic recovery and robust sectoral rebalancing (Bennett et al., 2019). One of the most important structural shifts is the declining dominance of the mining sector. Mining and quarrying grew only 3.7% on average per year, indicating stagnation in a sector that previously anchored the provincial economy. Although its absolute value increased slightly, from IDR 33.21 trillion (2020) to IDR 38.29 trillion (2024), its relative share has weakened, showing the long-term limits of extractive-based development.

Conversely, blue-economy-related sectors (agriculture–fisheries, manufacturing, transportation, and tourism) exhibited strong and resilient growth:

- a. Agriculture, Forestry, and Fisheries (A) grew 7.8% per year, supported by fisheries modernization and aquaculture expansion.
- b. Manufacturing I recorded an average 8.5% annual growth, showing an emerging value-added processing base, including food processing and marine products.
- c. Transportation and Warehousing (H)—a key maritime logistics sector—expanded rapidly at 9.6% per year, driven by port activity improvements and inter-island connectivity.
- d. Accommodation and Food Services (I)—representing marine and eco-tourism—grew 13.3% per year, indicating fast recovery following pandemic restrictions.

These dynamics demonstrate a gradual but meaningful transition from a mining-dependent economy toward a maritime, service-oriented, and value-added economic structure.

2. Empirical Profile of Key Sectors (2020–2024)

Table 1 presents a summary of the Gross Regional Domestic Product (GRDP) at current prices (ADHB) across the five priority sectors.

Table 1. Summarizes the GRDP (ADHB) of the Five Priority Sectors

Sector	2020	2021	2022	2023	2024
Agriculture, Forestry & Fisheries (A)	15,242	16,390	17,825	19,305	20,186
Mining & Quarrying (B)	33,206	35,782	36,985	37,654	38,290
Manufacturing Industry I	26,845	29,621	32,154	34,879	36,502
Transportation & Warehousing (H)	8,244	9,685	10,470	11,380	11,865
Accommodation & Food Service (I)	4,320	5,210	6,084	6,842	7,221

Source: BPS (2025)

The analysis of the five priority sectors reveals several important insights into the region's economic dynamics. The manufacturing sector has emerged as the second-fastest growing sector after tourism, indicating strong potential for the

development of downstream marine product processing as a key pillar of the blue economy. Meanwhile, the agriculture and fisheries sectors demonstrate consistent growth, which reflects improvements in aquaculture management, increased access to Islamic microfinance instruments, and more integrated value chains.

Tourism shows the most significant rebound, particularly during the 2021–2022 period, in line with Belitung’s recognition as a UNESCO Global Geopark and the revitalization of coastal destinations. In addition, the transport and warehousing sector has grown in tandem with the expansion of tourism and marine trade, underscoring the strategic importance of inter-island connectivity in supporting overall regional economic development.

3. Blue Economy Contribution to GRDP

Using the expanded definition of the blue economy (A + C + H + I), its total value increased significantly:

Table 2. Blue Economy Contribution to GRDP (2020–2024)

Year	Blue Economy Value (A+C+H+I)	Share of GRDP
2020	54.65 trillion	36.34%
2021	60.91 trillion	35.58%
2022	66.53 trillion	35.07%
2023	72.41 trillion	35.47%
2024	75.77 trillion	35.41%

Source: BPS (2025)

The post-pandemic recovery dynamics highlight a strong resurgence across several key sectors, particularly tourism, transport and logistics, as well as fisheries and agriculture. The tourism sector experienced a significant rebound, growing by 20.6% from 2020 to 2021 and continuing to rise by 16.79% from 2021 to 2022. This recovery was closely linked to the reopening of national air routes, the rapid normalization of tourism activities, and proactive promotion by local governments.

Similarly, the transport and logistics sector recorded substantial growth, exceeding 17.5% in 2021. This expansion was driven by increased freight movement, the rapid rise of e-commerce logistics, and the strengthening of port infrastructure in key areas such as Pangkalpinang and Belitung.

Meanwhile, the fisheries and agriculture sector demonstrated steady and consistent growth throughout the recovery period. This trend reflects ongoing aquaculture modernization, improved access to financing for fishermen through BMTs and ZISWAF instruments, and rising consumer demand as economic conditions gradually improved.

4. Mining Sector Slowdown and Implications

The mining sector (B) continues to hold the largest share in terms of single-sector value; however, its growth performance remains relatively low, ranging only between 1.68% and 3.40% annually. In addition, its role in job creation has gradually declined, while increasing environmental constraints and tighter regulatory frameworks further limit its expansion. These conditions indicate a long-term structural decline in the sector, thereby providing a strong strategic rationale for

transitioning toward more sustainable and value-added economic activities, particularly in maritime-based and halal-oriented value chains.

5. Role of Islamic Economics in Supporting Blue Economy

Islamic finance mechanisms, particularly those implemented by BMTs, Islamic cooperatives, and productive waqf institutions have made a significant contribution to regional economic development. These mechanisms have expanded access to capital, especially for small-scale coastal entrepreneurs. Instruments such as *qardhul hasan* help reduce financial barriers, while profit-sharing schemes like *mudarabah* and *musharakah* promote partnership-based investments in sectors such as aquaculture and small-scale processing industries.

Beyond financing, Islamic finance also strengthens ethical and sustainable business practices. The prohibition of speculative activities encourages more responsible resource management, while *maslahah*-based financing enables vulnerable yet productive groups, such as fishermen and micro tourism operators to actively participate in economic growth.

Furthermore, Islamic microfinance plays a crucial role in supporting the resilience of MSMEs. It provides essential backing for a range of community-based economic activities, including seafood processing enterprises, coastal homestays, eco-tourism groups, and micro-scale logistics service providers. Through these contributions, Islamic finance not only enhances financial inclusion but also fosters a more inclusive, sustainable, and community-oriented economic system.

Based on the above findings, Bangka Belitung's development trajectory can be characterized as a Blue-Halal-Regional Nexus, defined by:

- a. Blue (Maritime Sustainability): Resource stewardship, marine innovation, and ecosystem protection.
- b. Halal (Islamic Economic Ethics): Fairness, inclusivity, *maslahah*, equitable financing, and moral governance.
- c. Regional (Place-Based Competitiveness): Emphasizing geographic strengths – coastal tourism, fisheries, and port logistics.

This integrated model enhances: economic diversification, social inclusion, resilience to external shocks, long-term ecological sustainability.

6. Risks and Challenges

Despite the promising trends observed in the blue economy and Sharia-based financial inclusion, several risks and structural challenges must be acknowledged to ensure sustainable regional transformation. First, the rapid expansion of marine tourism and coastal activities increases the risk of ecological degradation, including shoreline erosion, waste accumulation, and habitat disruption, which may undermine long-term blue economy viability if not managed properly. Second, the dependency of coastal MSMEs on seasonal demand and fluctuating marine conditions exposes them to income instability, requiring more robust financial safety nets and adaptive business models. Third, while Islamic finance has expanded significantly, gaps in digital literacy, governance capacity, and product diversification remain barriers to fully leveraging Sharia-based instruments in remote island communities. Additionally, logistical constraints, inter-island connectivity limitations, and

disparities in infrastructure across districts present bottlenecks to realizing integrated maritime value chains. Taken together, these risks highlight the need for comprehensive policy coordination, stronger institutional capacity, and enhanced environmental safeguards to maintain the momentum of structural transformation in the Bangka Belitung Islands.

The findings of this study reveal several important trends in regional economic development over the 2020–2024 period. Overall, GRDP experienced significant growth, largely driven by the expansion of blue economy sectors. At the same time, the relative dominance of the mining sector has gradually declined, while sectors such as manufacturing, tourism, and logistics have shown notable and sustained growth.

The blue economy has consistently contributed approximately 35% to total GRDP, with its absolute value continuing to increase each year. This indicates not only its stability but also its growing strategic importance in shaping the regional economic structure. In parallel, Islamic economic instruments have played a crucial role in strengthening resilience at the micro level, particularly by supporting small-scale actors and enhancing the development of maritime-based value chains.

Taken together, the integration of blue economy principles with Islamic economic practices emerges as a viable and replicable model for sustainable development in archipelagic regions. This approach offers a balanced pathway that combines economic growth, social inclusion, and environmental sustainability.

E. CONCLUSION

This study concludes that the Bangka Belitung Islands are experiencing a substantive shift from a predominantly extractive, mining-based economy toward a diversified maritime development model grounded in blue economy principles. Empirical evidence from 2020–2024 shows that fisheries, manufacturing, maritime logistics, and tourism—core components of the blue economy—consistently outperform mining in growth, resilience, and recovery capacity. These findings align with regional development theory, which emphasizes structural transformation and sectoral upgrading as determinants of long-term economic sustainability.

The increasing absolute value of blue-economy-related sectors, alongside their stable contribution of approximately 35% to total GRDP, demonstrates that the province's economic foundations are gradually rebalancing toward ocean-based value creation. This trend suggests stronger future potential for marine value chains, coastal tourism, and downstream processing industries, each of which plays a strategic role in enhancing regional competitiveness.

Islamic economics further strengthens this transition by providing inclusive and ethical financial mechanisms that support MSMEs, particularly those engaged in fisheries, aquaculture, and coastal services. Instruments such as *mudarabah*, *qardhul hasan*, and productive waqf expand access to capital, reduce vulnerability, and promote equitable participation in the blue economy. This supports the argument that Islamic finance is an effective institutional complement to sustainable maritime development.

The integration of blue economy policies and Islamic economic principles forms a coherent framework for achieving economic diversification, social inclusion, and ecological sustainability in Bangka Belitung. The proposed Blue-Halal-Regional

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Nexus underscores the importance of linking environmental stewardship, ethical finance, and regional specialization. Continued institutional coordination, innovation, and investment in maritime infrastructure will be essential to consolidating this transformation and positioning Bangka Belitung as a model for sustainable archipelagic development.

Beyond the empirical findings presented in this study, future research should explore deeper quantitative linkages among blue economy sectors, Islamic financial instruments, and regional competitiveness using econometric and spatial-analysis approaches. Comparative studies with other Indonesian island provinces, such as Riau Islands, North Maluku, and Nusa Tenggara, would also provide broader validation of the Blue-Halal-Regional Nexus as an alternative development framework. Furthermore, longitudinal assessments of community-based Islamic finance programs and marine resource governance are necessary to capture long-term socio-economic and ecological outcomes. Strengthening these analytical dimensions will allow policymakers, practitioners, and scholars to further refine integrated strategies that ensure sustainable and inclusive growth in archipelagic regions such as the Bangka Belitung Islands.

REFERENCES

- ASEAN. (2023). *ASEAN Blue Economy Framework*. ASEAN Secretariat.
- Bennett, N. J., Cisneros, A. M., ... (2019). Towards a sustainable and inclusive blue economy. *Marine Policy*, 103, 1–10.
- BPS. (2025). *PDRB Provinsi Kepulauan Bangka Belitung 2020–2024*. Badan Pusat Statistik Provinsi Kepulauan Bangka Belitung.
- Cairns, R., & Krzywoszynska, A. (2016). Anatomy of a nexus: The water–energy–food nexus in the UK. *Environmental Science & Policy*, 64, 163–170. <https://doi.org/10.1016/j.envsci.2016.07.001>
- Chapra, M. U. (2008). *The Islamic Vision of Development in the Light of Maqasid al-Shariah*. Islamic Research and Training Institute.
- Haron, S., & Azmi, W. N. W. (2019). Islamic microfinance and rural development: Lessons from Indonesia and Malaysia. *Journal of Islamic Economics*, 12(3), 45–59.
- Hoff, H. (2011). *Understanding the nexus. Background Paper for the Bonn 2011 Conference: The Water, Energy and Food Security Nexus*. Stockholm Environment Institute.
- KNEKS. (2023). *Islamic Economic Outlook 2023*. Komite Nasional Ekonomi dan Keuangan Syariah.
- Kuznets, S. (1973). Modern economic growth: Findings and reflections. *American Economic Review*, 63(3), 247–258.
- Pahl-Wostl, C. (2019). Governance of the water-energy-food security nexus. *Environmental Science & Policy*, 90, 17–23.
- Porter, M. E. (1998). Clusters and the new economics of competition. *Harvard Business Review*, 76(6), 77–90.
- Schutter, O., Ghosh, J., & Morales, A. (2023). Sustainable oceans and coastal economies: Policy challenges and opportunities. *Marine Policy*, 150, 105–120.
- Syrquin, M. (2010). *Structural change and development*. Edward Elgar Publishing.
- Todaro, M. P., & Smith, S. C. (2020). *Economic Development*. Pearson.

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UNESCAP. (2021). *Blue Economy for Sustainable Development: Policy Pathways for Island States*. United Nations ESCAP.

World Bank. (2017). *The Potential of the Blue Economy*. World Bank Group.