



# Sustainable Development Through the Blue Economy and Food Security: An Analytical Literature Review

Wenny Desty Febrian<sup>1\*</sup>, Indra Sani<sup>2</sup>, Siti Annisa Wahdiniawati<sup>3</sup>, Ari Apriani<sup>4</sup>, Evaf Maulina<sup>5</sup>

<sup>1,3,4</sup>Dian Nusantara University, Jakarta, Indonesia

<sup>2</sup>Malang Asian Institute, Malang, Indonesia

<sup>5</sup>Aviation College, Jakarta, Indonesia

\*Corresponding author: [wenny.desty.febrian@undira.ac.id](mailto:wenny.desty.febrian@undira.ac.id) |

Received: 20 October 2025 | Revised: 20 December 2025 | Published: 30 January 2026

## Abstract

**Purpose:** This study analyzes the relationships among the blue economy, food security, and sustainable development to understand how marine resource governance contributes to long-term sustainability. As the global population approaches 9 billion by 2050, ensuring sustainable marine food production and supply chains has become an important policy and research concern.

**Research Methodology:** A qualitative literature review and bibliographic research approach were employed. Six peer-reviewed articles and relevant book chapters were systematically reviewed using secondary data from international journals, UN reports, World Bank publications, and academic databases. Comparative analysis was conducted to identify key opportunities and challenges in blue economy governance and food security management.

**Results:** The review identified three major relationships. First, the blue economy positively supports food security through sustainable management and conservation of marine resources. Second, the blue economy contributes to sustainable development by integrating economic growth, poverty reduction, and environmental protection. Third, food security promotes sustainable development by strengthening food governance, empowering small producers, and supporting the achievement of the Sustainable Development Goals (SDGs).

**Conclusions:** The blue economy and food security are interdependent drivers of sustainable development. Effective marine sustainability requires balanced integration of economic opportunities, food security, and environmental conservation through stakeholder collaboration, public–private partnerships, and technological innovation.

**Limitations:** The study is based on six reviewed studies and relies on qualitative analysis without statistical testing.

**Contributions:** This study proposes an integrated conceptual framework linking the blue economy, food security, and sustainable development and provides a foundation for future empirical research.

**Keywords:** *Blue Economy, Food Security, Marine Resources, Sustainable Development, Literature Review*

**How to Cite:** Febrian, W. D., Sani, N., Wahdiniawati, S. A., Apriani, A., & Maulina, E. (2026). Sustainable Development Through the Blue Economy and Food Security: An Analytical Literature Review. *Legal Systems, Justice, and Governance in Contemporary Society (LSJG)*, 1(1), 12–20.

## 1. Introduction

The blue economy, broadly defined as the sustainable use of ocean resources for economic growth, improved livelihoods, and ocean ecosystem health, has emerged as a central concept in global sus-

tainability policy since its articulation at the United Nations Conference on Sustainable Development (Rio+20) in 2012 (Lee et al., 2020). The guiding principle of the blue economy is to position marine and coastal resources as assets to be managed sustainably to generate economic opportunities, alleviate poverty, ensure stable food sources, and create long-term employment, particularly for coastal and island communities in developing nations (Voyer et al., 2020). Developing countries (small island developing states/SIDS) and some least developed countries (LDCs) have been early adopters of blue economy frameworks, seeking to unlock new economic potential from their extensive ocean territories (Keen et al., 2018).

Public-private partnerships have gradually replaced purely governmental coastal and maritime administration over the past three decades, with bilateral and private sector investments increasingly funding ocean management initiatives globally (Brent et al., 2018). These partnerships mobilize human, financial, and material resources to create environmentally friendly solutions that promote sustainable economic growth in coastal and marine areas. However, concerns have been raised about the highly commercialized dimension of some blue economy initiatives, which prioritize economic growth and investment returns over genuine ecological sustainability (Barbesgaard, 2018; Satizábal et al., 2020).

Food security has emerged as one of the most urgent global governance challenges. The Food and Agriculture Organization (FAO) of the United Nations has warned that the global food situation is under severe strain, with many countries at risk of food crises driven by underdeveloped agricultural systems, high global food prices, and the vulnerability of coastal food production systems (Food and Agriculture Organization, 2007; Olatidoye, 2022). Aquaculture, which currently contributes 47% of global seafood production, is expected to intensify significantly to meet the growing demand, raising concerns about environmental impact, resource competition, and waste management (Food and Agriculture Organization, 2018). Green biotechnology and biorefinery innovations offer promising pathways for improving seafood supply chain sustainability by converting processing waste into value-added products, thereby supporting both blue economy and food security objectives (Venugopal, 2022).

The Indian Ocean context is particularly significant: one-third of the world's population lives in Indian Ocean coastal countries, relying heavily on marine resources for survival, food security, and economic sustenance. Therefore, promoting the blue economy through sustainable regional marine resource management is a prerequisite for achieving the UN Sustainable Development Goals (SDGs) in this region (Roy, 2019). This study examines how blue economy governance and food security management jointly shape sustainable development outcomes, pursuing three objectives: (1) to analyze the blue economy's influence on food security; (2) to analyze the blue economy's influence on sustainable development; and (3) to analyze the influence of food security on sustainable development.

## 2. Literature Review

---

### 2.1 *The Blue Economy Concept*

The blue economy encompasses economic activities focused on the advanced sustainable management and conservation of marine and coastal resources, generating growth while protecting the ecological systems on which long-term economic viability depends (Voyer et al., 2020). While the term entered mainstream policy discourse at Rio+20 in 2012, blue economy initiatives have since proliferated across different geographies and institutional contexts, ranging from fisheries management, aquaculture development, marine tourism, and maritime transportation to offshore energy, seabed mining, and marine biotechnology (Lee et al., 2020). The World Bank (World Bank, 2017) identifies the blue economy's potential across multiple ocean-based industries, emphasizing that sustainable ocean governance is both an environmental and economic imperative.

Blue economy discourse aims to achieve 'blue growth' by linking poverty alleviation, social justice, and ocean conservation, positioning marine resources as development assets rather than exhaustible commodities. However, critical scholars have raised concerns that some blue economy initiatives prioritize capital investment and extraction over genuine sustainability, creating the risk of 'ocean grabbing'—the capture of marine resources by powerful commercial actors at the expense of artisanal fishers and coastal communities (Barbesgaard, 2018).

## **2.2 Food Security and Marine Resources**

Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Food and Agriculture Organization, 2007). Marine resources are critical to global food security, accounting for two-thirds of total global fish production and 80% of global aquaculture production, and the per capita supply of fish from coastal and marine sources is 65% higher than the global average (Olatidoye, 2022). Aquaculture, which currently provides 47% of the world's seafood production (171 MT in 2016; FAO, 2018), is expected to intensify significantly to meet the projected demand of a population exceeding 9 billion by 2050 (Blanchard et al., 2017).

The intensification of aquaculture raises significant concerns regarding environmental sustainability. Higher stocking densities, increased feed requirements, water use, solid waste generation, and biodiversity impacts must be managed through technological innovation and governance frameworks that align production with ecological sustainability. Green processing innovations in marine biotechnology offer pathways toward zero-waste seafood supply chains through biorefinery approaches that convert fish processing waste into medicines, bioenergy, and industrial materials (Tocher et al., 2019; Venugopal, 2022).

## **2.3 Sustainable Development and the SDGs**

Sustainable development encompasses the economic, social, and environmental dimensions of long-term human well-being, operationalized through the United Nations 2030 Agenda's 17 Sustainable Development Goals (Morton et al., 2017). The blue economy and food security are directly relevant to multiple SDGs, including SDG 2 (Zero Hunger), SDG 14 (Life Below Water), SDG 8 (Decent Work and Economic Growth), and SDG 17 (Partnerships for Goals). Food security governance, encompassing the improvement of food system governance, inclusive investment in agriculture, rural health and education, empowerment of small producers, and strengthening of social safeguards, is crucial for enabling countries to achieve SDGs (Stevens et al., 2018; United Nations, 2022).

## **3. Methodology**

---

This study employs a qualitative literature review methodology with a bibliographic and comparative analysis. The literature was identified and compiled from multiple sources—academic journal articles, book chapters, UN agency reports, and World Bank publications—accessed through Mendeley, Google Scholar, and institutional library databases. The inclusion criteria required that sources: (1) address at least one of the three study variables (blue economy, food security, sustainable development); (2) be published in peer-reviewed journals, academic edited volumes, or major intergovernmental organization publications; and (3) be available in full-text form for content analysis (Creswell & Creswell, 2018).

Six core scientific literatures were systematically reviewed and critically analyzed for this study, supplemented by additional contextual references. A comparative analysis was applied across the reviewed sources to identify convergent findings and synthesize evidence on the three inter-variable relationships examined. This study uses secondary data to examine the current state of marine resources and identify opportunities and challenges in the sustainable governance of the blue economy and food security sys-

tems. The conceptual framework was developed inductively from the literature synthesis and represents a hypothesis-generating model for future testing.

## 4. Results and Discussion

---

This section analyzes and synthesizes the literature on three inter-variable relationships: the blue economy's influence on food security, the blue economy's influence on sustainable development, and food security's influence on sustainable development.

### 4.1 *Blue Economy's Influence on Food Security*

The literature consistently confirms a positive relationship between the blue economy and that of food security. (Olatidoye, 2022) documents that the blue economy generates the conditions necessary for sustainable food production and supply chain stability through the advanced sustainable management and conservation of marine and coastal resources. Marine resources are indispensable to global food security: they account for two-thirds of total global fish production and 80% of global aquaculture output, with per capita fish supply from these sources being 65% above the world average. As the global population grows, the adequacy of this marine food supply will depend on both natural carrying capacity factors and governance decisions regarding sustainable extraction levels (Cisneros-Montemayor et al., 2021; Febrina et al., 2025; Roy, 2019).

The blue economy framework promotes sustainable fisheries management, regulated aquaculture expansion, and reduction of seafood waste through green processing innovations, all of which directly strengthen food security by maintaining and potentially expanding the long-term productive capacity of marine food systems (Alsaleh, 2023; Sumaila et al., 2021; Tocher et al., 2019; Venugopal, 2022). Aquaculture's growing contribution to seafood supply (now 47% of global production) represents both the blue economy's practical food security contribution and a governance challenge: unconstrained intensification risks environmental degradation, which would ultimately undermine the food security benefits it currently provides (Alharthi & Hanif, 2020; Blanchard et al., 2017; Ren et al., 2022). A key implication for policy is that blue economy governance frameworks must explicitly integrate food security metrics and nutritional outcome assessments, alongside traditional economic and environmental indicators (Brodie Rudolph et al., 2020; Phelan et al., 2020; Winther et al., 2020).

### 4.2 *Blue Economy's Influence on Sustainable Development*

The reviewed literature documents a significant positive relationship between the blue economy and sustainable development, which operates through multiple channels (Fang et al., 2021; Martínez-Vázquez et al., 2021). At the macro level, the blue economy supports sustainable development by integrating marine resource governance with economic growth objectives, enabling coastal nations to leverage their ocean territories as engines of sustainable prosperity rather than depleting them for short-term gain (United Nations, 2022; Voyer et al., 2020; World Bank, 2017). Through sustainable management of the Indian Ocean Basin, Roy (Farmery et al., 2021; Roy, 2019) demonstrates that the blue economy can simultaneously address economic development, food security, and ecological conservation—three dimensions of sustainable development that are often treated as competing rather than complementary.

Public-private partnerships central to contemporary blue economy governance have proven effective in mobilizing the financial resources, technical expertise, and institutional coordination needed for large-scale marine conservation initiatives, while concerns remain about the accountability and distributional equity of such partnerships (Brent et al., 2018; Lee et al., 2020; Pace et al., 2023; Wang et al., 2024). The integration of green processing biotechnology, which converts seafood processing waste into bioenergy, medicines, and industrial materials, represents a particularly promising blue economy–sustainable development nexus, as it simultaneously reduces environmental impact, creates economic value from

previously wasted materials, and supports the circular economy transition (Ahammed et al., 2025; Crona et al., 2023; Venugopal, 2022). These innovations can simultaneously advance multiple SDGs, including SDG 14 (life below water), SDG 12 (responsible consumption and production), and SDG 9 (industry, innovation, and infrastructure).

### 4.3 Food Security's Influence on Sustainable Development

Food security governance is directly linked to sustainable development through both its outcome dimensions—ensuring nutritional adequacy for growing populations—and its process dimensions—building inclusive and equitable food system governance structures that enable sustainable rural development (Goli et al., 2024). (Morton et al., 2017) and (Stevens et al., 2018) document that achieving food security requires multidimensional governance action: improving food system governance; promoting inclusive and responsible investment in agriculture and rural infrastructure; empowering small producers through technology access and market inclusion; and strengthening social safeguards to mitigate vulnerability risks. Each of these dimensions has direct implications for sustainable development beyond food (Guliyev et al., 2024; Tjilen et al., 2024).

Food security is connected to all 17 UN SDGs through direct and indirect pathways (United Nations, 2022): SDG 2 (zero hunger) directly; SDGs 1, 3, and 6 (poverty, health, water) through nutritional adequacy; SDGs 8, 10, and 11 (economic growth, inequality, urban resilience) through rural economic development; and SDGs 13, 14, and 15 (climate, marine, terrestrial life) through sustainable agricultural and marine resource management. Better governance of food security systems—incorporating sustainable and equitable agricultural technologies and modern information systems—creates systemic foundations for multi-SDG achievement (Barbesgaard, 2018; Bennett et al., 2021; Lee et al., 2020; Olatidoye, 2022; United Nations, 2022).

### 4.4 Conceptual Framework

Based on the three-variable relationship analysis above, the conceptual framework for this study positions the blue economy (X1) and food security (X2) as jointly influencing sustainable development (Y), with the blue economy directly influencing food security. This framework generates three research propositions that can be operationalized as hypotheses for empirical testing in future quantitative research.

$H_1$  : The blue economy positively and significantly influences food security.

$H_2$  : The blue economy positively and significantly influences sustainable development.

$H_3$  : Food security positively and significantly influences sustainable development.

## 5. Conclusions

---

This literature review analyzed the relationships among the blue economy, food security, and sustainable development by synthesizing evidence from six peer-reviewed studies and supplementary international organization publications. Three principal conclusions were drawn. First, the blue economy positively influences food security ( $H_1$ ) by sustaining and enhancing the marine resource base—fisheries, aquaculture, and seafood supply chains— which provides two-thirds of global fish production and 47% of aquaculture output. Blue economy governance frameworks that prioritize sustainable resource extraction, marine ecosystem conservation, and green seafood processing innovations create conditions for long-term food security in coastal and ocean-dependent communities. Second, the blue economy significantly influences sustainable development ( $H_2$ ) through multiple pathways: generating marine-based economic growth and employment, integrating ocean conservation with poverty alleviation, enabling public-private investment in coastal and maritime infrastructure, and supporting the simultaneous achievement of multiple SDGs. The Indian Ocean context specifically illustrates how blue economy governance can address

the intertwined challenges of economic development, food security, and ecological sustainability for one-third of the world's population. Third, food security positively influences sustainable development ( $H_3$ ) through inclusive food system governance, rural investment, small-producer empowerment, and social safeguard strengthening, each of which generates sustainable development co-benefits across poverty, health, economic, and environmental SDGs. Food security governance is thus not merely a humanitarian objective but a foundational governance architecture for the achievement of multiple SDGs.

## **Acknowledgements**

---

The authors express sincere gratitude to the research institutions and publishing platforms that made the academic literature underpinning this review accessible to them. The authors also acknowledge the support of Dian Nusantara University, Malang Asian Institute, and Aviation College.

## **Author Contributions**

---

WDF conceptualized the study, developed the review protocol, and drafted the manuscript; IS conducted literature searching, screening, and data extraction; SAW performed thematic analysis and contributed to data interpretation; AA assisted in the development of the conceptual framework and manuscript revision; and EM provided methodological validation, critical review, and final editing of the manuscript. All authors reviewed and approved the final manuscript.

## **Conflicts of Interest**

---

The authors declare that there is no conflict of interest regarding the publication of this study. This research was conducted independently, and no financial or personal relationships influenced the results or interpretation of the findings.

## References

---

- Ahammed, S., Rana, M. M., Uddin, H., Majumder, S. C., & Shaha, S. (2025). Impact of blue economy factors on the sustainable economic growth of china. *Environment, Development and Sustainability*, 27(6), 12625–12652. <https://doi.org/10.1007/s10668-023-04411-6>
- Alharthi, M., & Hanif, I. (2020). Impact of blue economy factors on economic growth in the saarc countries. *Maritime Business Review*, 5(3), 253–269. <https://doi.org/10.1108/MABR-01-2020-0006>
- Alsaleh, M. (2023). The role of the fishery industry in the shift towards sustainable food security: A critical study of blue food. *Environmental Science and Pollution Research*, 30(48), 105575–105594. <https://doi.org/10.1007/s11356-023-29747-4>
- Barbesgaard, M. (2018). Blue growth: Savior or ocean grabbing? *Journal of Peasant Studies*, 45(1), 130–149. <https://doi.org/10.1080/03066150.2017.1377186>
- Bennett, N. J., Blythe, J., White, C. S., & Campero, C. (2021). Blue growth and blue justice: Ten risks and solutions for the ocean economy. *Marine Policy*, 125, 104387. <https://doi.org/10.1016/j.marpol.2020.104387>
- Blanchard, J. L., Watson, R. A., Fulton, E. A., Cottrell, R. S., Nash, K. L., Bryndum-Buchholz, A., Büchner, M., Carozza, D. A., Cheung, W. W. L., Elliott, L. N. K., Davidson, L. N. K., Dulvy, N. K., Dunne, J. P., Eddy, T. D., Galbraith, E., Lotze, H. K., Maury, O., Müller, C., Tittensor, D. P., & Jennings, S. (2017). Linked sustainability challenges and trade-offs among fisheries, aquaculture and agriculture. *Nature Ecology and Evolution*, 1(9), 1240–1249. <https://doi.org/10.1038/s41559-017-0258-8>
- Brent, Z. W., Barbesgaard, M., & Pedersen, C. (2018). *The blue fix: Unmasking the politics behind the promise of blue growth*. Transnational Institute.
- Brodie Rudolph, T., Ruckelshaus, M., Swilling, M., Allison, E. H., Österblom, H., Gelcich, S., & Mbatha, P. (2020). A transition to sustainable ocean governance. *Nature Communications*, 11(1), 3600. <https://doi.org/10.1038/s41467-020-17410-2>
- Cisneros-Montemayor, A. M., Moreno-Báez, M., Reygondeau, G., Cheung, W. W., Crosman, K. M., González-Espinosa, P. C., Ota, Y., et al. (2021). Enabling conditions for an equitable and sustainable blue economy. *Nature*, 591(7850), 396–401. <https://doi.org/10.1038/s41586-021-03327-3>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Crona, B. I., Wassénus, E., Jonell, M., Koehn, J. Z., Short, R., Tigchelaar, M., Verones, F., Wabnitz, C. C., & Troell, M. (2023). Four ways blue foods can help achieve food system ambitions across nations. *Nature*, 616(7955), 104–112. <https://doi.org/10.1038/s41586-023-05737-x>
- Fang, X., Zou, J., Wu, Y., Zhang, Y., Zhao, Y., & Zhang, H. (2021). Evaluation of the sustainable development of an island “blue economy”: A case study of hainan, china. *Sustainable Cities and Society*, 66, 102662. <https://doi.org/10.1016/j.scs.2020.102662>
- Farmery, A. K., Allison, E. H., Andrew, N. L., Troell, M., Voyer, M., Campbell, B., Eriksson, H., Fabinyi, M., Song, A. M., & Steenbergen, D. (2021). Blind spots in visions of a “blue economy” could undermine the ocean’s contribution to eliminating hunger and malnutrition. *One Earth*, 4(1), 28–38. <https://doi.org/10.1016/j.oneear.2020.12.002>
- Febrina, S., Aimon, H., Kurniadi, A. P., & Marta, J. (2025). Assessing the role of the blue economy in strengthening food security: Evidence from lower-middle-income asean countries. *Challenges in Sustainability*, 13(1), 110–121. <https://doi.org/10.56578/cis130108>
- Food and Agriculture Organization. (2007). *The state of food insecurity in the world 2007*.
- Food and Agriculture Organization. (2018). *The state of world fisheries and aquaculture 2018: Meeting the sustainable development goals*.

- Goli, I., Kriaučiūnienė, Z., Zhang, R., Bijani, M., Koochi, P. K., Rostamkalaei, S. A., Azadi, H., et al. (2024). Contributions of climate smart agriculture toward climate change adaptation and food security: The case of mazandaran province, iran. *Trends in Food Science & Technology*, *152*, 104653. <https://doi.org/10.1016/j.tifs.2024.104653>
- Guliyev, E., Atashov, B., & Guliyeva, A. (2024). Role of government policy in food security: Economic and demographic challenges. *Problems and Perspectives in Management*, *22*(2), 488–501. [https://doi.org/10.21511/ppm.22\(2\).2024.38](https://doi.org/10.21511/ppm.22(2).2024.38)
- Keen, M. R., Schwarz, A. M., & Wini-Simeon, L. (2018). Towards defining the blue economy: Practical lessons from pacific ocean governance. *Marine Policy*, *88*, 333–341. <https://doi.org/10.1016/j.marpol.2017.03.002>
- Lee, K. H., Noh, J., & Khim, J. S. (2020). The blue economy and the united nations' sustainable development goals: Challenges and opportunities. *Environment International*, *137*, 105528. <https://doi.org/10.1016/j.envint.2020.105528>
- Martínez-Vázquez, R. M., Milán-García, J., & de Pablo Valenciano, J. (2021). Challenges of the blue economy: Evidence and research trends. *Environmental Sciences Europe*, *33*(1), 61. <https://doi.org/10.1186/s12302-021-00502-1>
- Morton, S., Pencheon, D., & Squires, N. (2017). Sustainable development goals (sdgs), and their implementation. *British Medical Bulletin*, *124*(1), 81–90. <https://doi.org/10.1093/bmb/ldx031>
- Olatidoye, O. P. (2022). Blue economy, food security, and food sustainability. In *Blue economy and sustainable development* (pp. 31–49). IGI Global. <https://doi.org/10.4018/978-1-6684-3393-5.ch003>
- Pace, L. A., Saritas, O., & Deidun, A. (2023). Exploring future research and innovation directions for a sustainable blue economy. *Marine Policy*, *148*, 105433. <https://doi.org/10.1016/j.marpol.2022.105433>
- Phelan, A., Ruhanen, L., & Mair, J. (2020). Ecosystem services approach for community-based ecotourism: Towards an equitable and sustainable blue economy. *Journal of Sustainable Tourism*, *28*(10), 1665–1685. <https://doi.org/10.1080/09669582.2020.1747475>
- Ren, S., Li, L., Han, Y., Hao, Y., & Wu, H. (2022). The emerging driving force of inclusive green growth: Does digital economy agglomeration work? *Business Strategy and the Environment*, *31*(4), 1656–1678. <https://doi.org/10.1002/bse.2975>
- Roy, A. (2019). *Blue economy in the indian ocean: Governance perspectives for sustainable development in the region*. Observer Research Foundation.
- Satizábal, P., Dressler, W. H., Fabinyi, M., & Pido, M. D. (2020). Blue economy discourses and practices: Reconfiguring ocean spaces in the philippines. *Maritime Studies*, *19*(2), 207–221. <https://doi.org/10.1007/s40152-020-00168-0>
- Stevens, J. R., Newton, R. W., Tlusty, M., & Little, D. C. (2018). The rise of aquaculture by-products: Increasing food production, value, and sustainability through strategic utilisation. *Marine Policy*, *90*, 115–124. <https://doi.org/10.1016/j.marpol.2017.12.027>
- Sumaila, U. R., Walsh, M., Hoareau, K., Cox, A., Teh, L., Abdallah, P., Zhang, J., et al. (2021). Financing a sustainable ocean economy. *Nature Communications*, *12*(1), 3259. <https://doi.org/10.1038/s41467-021-23168-y>
- Tjilen, A. P., Tambaip, B., Dharmawan, B., Adrianus, A., Riyanto, P., & Ohoiwutun, Y. (2024). Engaging stakeholders in policy decision-making for food security governance: Identification, perception, and contribution. *Corporate Governance and Organizational Behavior Review*, *8*(1), 144–154. <https://doi.org/10.22495/cgobrv8i1p12>
- Tocher, D. R., Betancor, M. B., Sprague, M., Olsen, R. E., & Napier, J. A. (2019). Omega-3 long-chain polyunsaturated fatty acids, epa and dha: Bridging the gap between supply and demand. *Nutrients*, *11*(1), 89. <https://doi.org/10.3390/nu11010089>

- United Nations. (2022). *The sustainable development goals report 2022*.
- Venugopal, V. (2022). Green processing of seafood waste biomass towards blue economy. *Current Research in Environmental Sustainability*, 4, 100164. <https://doi.org/10.1016/j.crsust.2022.100164>
- Voyer, M., Farmery, A. K., Kajlich, L., Vachette, A., & Quirk, G. (2020). Assessing policy coherence and coordination in the sustainable development of a blue economy: A case study from timor leste. *Ocean and Coastal Management*, 192, 105187. <https://doi.org/10.1016/j.ocecoaman.2020.105187>
- Wang, J., Zhang, R., He, T., & Belgrano, A. (2024). Blue foods security and sustainability. *Frontiers in Marine Science*, 11, 1487645. <https://doi.org/10.3389/fmars.2024.1487645>
- Winther, J. G., Dai, M., Rist, T., Hoel, A. H., Li, Y., Trice, A., Whitehouse, S., et al. (2020). Integrated ocean management for a sustainable ocean economy. *Nature Ecology & Evolution*, 4(11), 1451–1458. <https://doi.org/10.1038/s41559-020-1259-6>
- World Bank. (2017). *The potential of the blue economy: Increasing long-term benefits of the sustainable use of marine resources for small island developing states and coastal least developed countries*. <https://doi.org/10.1596/26843>