Public environmental literacy through blue economy discourse: A media analysis in North Maluku (2020–2021)

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Abstract
North Maluku is one of the provinces in Indonesia, and two-thirds of its territory is in the ocean. Therefore, further exploration is needed to see how the distribution of discourse in online news media is related to the utilization of marine resources using sustainable principles through the blue economy. This study aims to describe the concept of the blue economy within the framework of sustainable development in North Maluku, with indicators of efficient use of natural resources, empowerment of local resources, zero waste, poverty alleviation, and employment absorption, based on news reporting by online media. The qualitative-descriptive method was used to analyze news from five online news media using NVivo 12 plus software. The results of the study show that: 1) the intensity of news reporting on the blue economy discourse based on indicators is dominated by the indicator of efficient use of natural resources for the Pikiran-rakyat.com, Mongabay.co.id, Kieraha.com, and Kabarpulau.co.id media. In contrast, Kompas.com is more dominated by indicators of the empowerment of local resources. 2) Word frequency analysis on the five online news media found that the keywords related to the blue economy in North Maluku boil down to issues of fisheries and marine management, mangroves, and waste. 3) Meanwhile, the cluster analysis shows that each indicator has a close relationship with different levels of closeness values. From the overall analysis of the news, it is concluded that implementation based on the principles of the blue economy has been carried out on several indicators, although not yet optimal.

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1. Introduction

The marine potential in regions with larger sea areas than land areas requires careful planning based on a development strategy based on the blue economy (Saksono, 2013). The government built this awareness when the proposal of blue economy principles was put forward in the Rio+20 forum. North Maluku has an area of 145,801.10 km^2, where about 75% of the total is the ocean. It is directly adjacent to waters on all sides, namely the Pacific Ocean in the North, the Halmahera Sea in the East, the Maluku Sea in the West, and the Seram Sea in the South. It also creates challenges and opportunities for North Maluku in its management in the fisheries sector (Haikal et al., 2012). An inventory of fish species distribution in North Maluku can be seen in Figure 1.

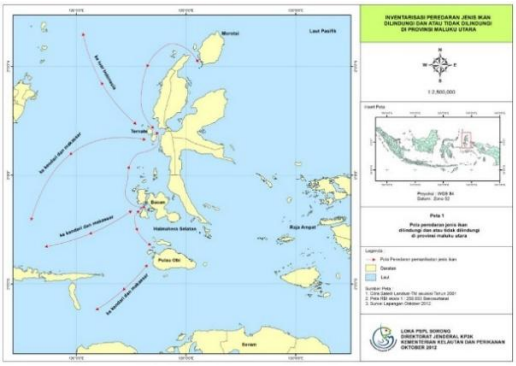

Figure 1. Inventory of fish species distribution in North Maluku (KKP.go.id, 2013)

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Referring to the area of the ocean that is larger than the land, a good strategy is needed in development, including through the management of its resources, so that the community's welfare and quality of life can change for the better (Saksono, 2013). Furthermore, according to the Indonesian Maritime Council (2012) (Chandra et al., 2021), to arrange the integration and harmony of marine economic development so that it is sustainable, preparing a blue economy-based marine economic development policy in national development is a must. The blue economy concept is considered an alternative in marine and fisheries development now and in the future (Ervianto, 2018; Alhusain et al., 2019).

The blue economy concept is also included in the Sustainable Development Goals (SDGs) framework (Bari, 2017). The blue economy within the sustainable development framework is also an integration of the pillars of social, economic, and environmental development and is supported by the pillars of legal development and governance (Wiratma & Nurgiyanti, 2019; Chen et al., 2020). In simpler terms, the blue economy is economic development that emphasizes improving people's welfare and social equity while reducing environmental risks and ecological scarcity (Rahmadi, 2021). The concept of blue economy is an extension (Kabil et al., 2021) while correcting the concept of green economy (Sukarniati & Khoirudin, 2017) and circular economy (Sundana et al., 2019).

The concept of the blue economy itself was introduced by Belgian economist Gunter Pauli, who is the founder and activist of the Zero Emission Research Initiative (ZERI), through his book entitled "The Blue Economy: 10 Years, 100 Innovations, and 100 Million jobs" (Rahmadi, 2021). The principles in the blue economy are; efficient use of natural resources, especially marine resources (Ervianto, 2018; Rahardjo & Gurning, 2018), non-waste (Rani & Cahyasari, 2015; Rahardjo & Gurning, 2018), social inclusiveness (employment and poverty alleviation) (Rahardjo & Gurning, 2018), innovation (KKP, 2012; Rahardjo & Gurning, 2018), cyclical production systems (Rahardjo & Gurning, 2018; Sundana et al., 2019), and creativity (Sukarniati & Khoirudin, 2017; Mahmud, 2018; Nursita, 2020). Furthermore, the blue economy is also an economic activity that relies on local resources (Laurensius et al., 2020). The blue economy is also called the ocean economy (Smith-Godfrey, 2016).

The blue economy approach in sustainable marine development includes three aspects, namely, 1) the implementation of good marine governance, 2) the development of blue economic areas, and 3) the development of blue economy investment and business models (Sutardjo, 2014). While marine policy, with a blue economy model, through the marine economy sector, has eight development strategies, namely in the marine transportation sector, marine industry, fisheries, marine tourism, energy and mineral resources, marine buildings, marine services, cross-sectoral marine fields (KKP, 2012). The blue economy concept is believed to be environmentally friendly and focused on developing countries with water areas (Ayuningtyas, 2018).

Previous studies have explored the concept of a blue economy in the sustainable development framework. Some previous studies include research from Saksono (2013) in Anambas Islands Regency, Riau Islands, proving that blue economy-based regional development integrated with land development programs is a new way to provide added economic value and competitiveness and is for accelerating the development of the islands. Furthermore, research Mira et al., (2014) showed that coastal communities in Brebes Regency, Central Java, have applied the principles of the blue economy through longyam, polyculture, and fish skin processing into crackers. Furthermore, another study with the same locus as this study, namely research Mahmud (2018), suggested that mangrove rehabilitation with a blue economy base strongly supports the North Maluku maritime axis program biophysically, socially, economically, and culturally. However, this study recommends that mangrove rehabilitation in North Maluku should be further enhanced, given its abundant mangrove potential and favorable geographical characteristics.

Meanwhile, research Nursita (2020) in Karampuang Island, West Sulawesi, showed that the utilization of coral reefs by the community is for livelihoods, tourism assets, anticipation of the island from waves, and building materials. The study recommends more clearly implementing the legal umbrella, coral reef resource planning based on blue economy and sustainable development, and job diversification to reduce the number of destructive activities against coral reefs. Finally, in a study Setyawati et al. (2021) in Sabang City, it was shown that marine potential has begun to be developed based on blue economy principles, where conservation areas established by the local government play an essential role in the process of nature conservation, and have provided a multiplayer effect on improving the welfare of coastal communities.

Although a number of previous studies have examined the blue economy within the framework of sustainable development through integrative approaches linking land and maritime communities (Saksono, 2013), local coastal practices (Mira et al., 2014), ecosystem rehabilitation programs (Mahmud, 2018; Nursita, 2020), and the role of marine conservation areas (Setyawati et al., 2021)—the majority of these studies remain confined to a descriptive-applicative dimension. In other words, the blue economy is primarily treated as a technical policy or sectoral solution, without critically addressing how the concept is constructed, disseminated, and contested within the public discursive arena. A major gap emerging from these studies is the absence of a systematic attempt to understand the blue economy as a discourse that is produced and circulated through the media. This is particularly critical in strategic development contexts such as North Maluku, where online media

plays a significant role in shaping public perception, influencing public opinion, and legitimizing development policies. The lack of a media discourse analysis approach in previous research has resulted in limited insights into how the blue economy narrative is constructed—who frames the issues, who benefits, and who is marginalized within the discourse of sustainable development.

Furthermore, the difference between this research and previous studies lies in the composition of the indicators used in the concept of blue economy in the framework of sustainable development, namely the efficient use of natural resources, empowerment of local resources, labor absorption, poverty alleviation and zero waste (Augusto et al., 2024; Elston & Pinto, 2024; Rizky et al., 2025; Dobrowolski et al., 2025; Hasyim et al., 2025; Prihatin et al., 2025). Another difference is the locus and method of research and the software for processing research data. This research uses five online news media to focus on the discourse and practice/phenomenon of the blue economy within the framework of sustainable development in North Maluku from January 1, 2020, to December 31, 2021. This research aims to find out and describe the discourse and practice/phenomenon of the blue economy in the framework of sustainable development in North Maluku, with the five blue economy indicators that have been mentioned, based on the coverage of five online news media, namely; Pikiran-rakyat.com, Kompas.com, Mongabay.co.id, Kieraha.com, and Kabarpulau.co.id. The urgency of this research is expected to be one of the reflective materials to understand the concept of a blue economy in the sustainable development framework, where the pillars of social, environmental, and economic development (including law and governance) are integrated.

2. Method

This study employs a qualitative-descriptive methodology to comprehensively examine the concept of the blue economy and its implementation in North Maluku during the years 2020 and 2021. Data analysis was conducted using NVivo 12 Plus software, utilizing its NCapture feature to systematically collect relevant news articles. The online news sources selected for this study focused primarily on environmental issues and included specialized environmental media such as Mongabay.co.id, as well as local outlets that frequently publish environmental content, namely Kabarpulau.co.id and Kieraha.com. Additionally, two of Indonesia's leading national mainstream media platforms, Pikiran-rakyat.com and Kompas.com, were included based on their top website rankings according to SimilarWeb (Similarweb, 2025). The news time frame considered spans from January 1, 2020, to December 31, 2021. The theoretical framework and thought process are shown in Figure 2.

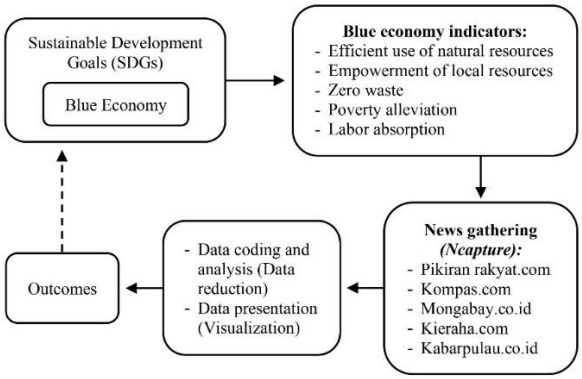

Figure 2. Theoretical framework and thought process

The researcher categorized the indicators of the blue economy concept within the context of sustainable development by examining indicators referenced in previous studies, namely: the efficient use of natural resources, empowerment of local resources, labor absorption, poverty alleviation and zero waste (Augusto et al., 2024; Elston & Pinto, 2024; Rizky et al., 2025; Dobrowolski et al., 2025; Hasyim et al., 2025; Prihatin et al., 2025). Once the news stories were gathered using the NCapture function, they were organized and examined individually. Subsequently, the data was inputted into the pre-established nodes (the indicators) within the NVivo 12 plus program for the purpose of organizing and later visualizing the information (data reduction) (Allsop et al., 2022). This step is to read and code the narrative into nodes, and this can be highlighted on frequently occurring words, cases, and or mixtures to obtain sentences that have a relevant meaning to the research problem (Lim, 2024). The processed data is subsequently validated and provided as study findings. The visible data is next analyzed by examining the nodes (indicators) that have been encoded within the blue economy framework, leading to a conclusion. The processed data is validated and provided as research findings using the Crosstab Query feature in the NVivo 12 plus software. The visible data is then analyzed by examining the nodes (indicators) coded in the blue economy framework, which leads to a conclusion. In addition, the researcher also looked at the dominant topics in the news of the five media used in this study using the word frequency feature, which shows the words or sentences that appear most often as a sign that the topic is frequently discussed (Alam, 2021). Finally, the researcher used Pearson correlation to assess the homogeneity of news coverage between media (McKinley et al., 2022). This analysis also confirmed how the discourse on the

blue economy within the sustainable development framework was reported by the online news media selected in this study.

3. Results and Discussion

The blue economy approach is proposed to balance sustainable development's environmental, economic, and social dimensions and address the poverty-environment nexus in the ocean and coastal management (Louey, 2022). A sustainable ocean economy emerges when economic activities are balanced with the long-term capacity of marine ecosystems to support these activities and remain resilient and healthy. Other goals of the blue economy include improving human well-being and social equity, significantly reducing environmental risks and ecological scarcity, and supporting low carbon, resource efficiency, and social inclusion (Das, 2023; Galdolage et al., 2024; Nguyen, 2024; Zhou et al., 2025; Dai, 2025; John et al., 2025). Furthermore, the indicators used in analyzing the discourse, phenomena, and practices of the blue economy in the framework of sustainable development in five online news media are the efficient use of natural resources, empowerment of local resources, labor absorption, poverty alleviation and zero waste (Augusto et al., 2024; Elston & Pinto, 2024; Rizky et al., 2025; Dobrowolski et al., 2025; Hasyim et al., 2025; Prihatin et al., 2025).

The results of a search conducted by the author related to environmental issues in North Maluku for two whole years (January 1, 2020 - December 31, 2021) on five online news media, which were then analyzed using NVivo 12 plus (Table 1), can be seen incoherence between the number of news and the number of citations. Mongabay.co.id and Kabarpulau.co.id, which have fewer news articles than Kieraha.com, have more citations in almost every indicator (except for the non-waste indicator on Kabarpulau.co.id, and the poverty alleviation and employment indicators on Mongabay.co.id).

Table 1. Number of news reports and citations (by indicator) related to the blue economy

Media	Total	Indicators				
		Efficient use of natural resources	Empowerment of local resources	Zero waste	Poverty alleviation	Labor absorption
Pikiran-rakyat.com	18	32	21	1	-	-
Kompas.com	9	12	23	-	-	-
Mongabay.co.id	44	345	169	95	2	2
Kieraha.com	46	75	35	23	5	6
Kabarpulau.co.id	30	117	79	19	11	18

Furthermore, based on the crosstab query analysis using NVivo 12 plus software, it was found that of the five indicators selected, the indicator of efficient use of natural resources was the most frequently mentioned in each news media (except Kompas.com media, which had a higher percentage of coverage of the local resource empowerment indicator) (Figure 3). However, this result does not confirm that the overall environmental management in North Maluku is based on the principles of the blue economy and sustainable development, because most of the news carried out by each online news media, mainly report on environmental management which is precisely the opposite of the indicators of the blue economy and sustainable development, where the environmental development pillar and the social development pillar in the framework of sustainable development, often become victims of the economic development pillar. This is in contrast to what the Ministry of Maritime Affairs and Fisheries has stated, where the blue economy is considered a concept that combines economic development and environmental conservation (KKP, 2012). The reporting by these five online news media perpetuates the old economic approach model, where nature is always the victim due to excessive exploitation (Nikčević & Škurić, 2021).

In the pikiran-rakyat.com media, the news content needs to clearly mention environmental and social issues summarized in poverty alleviation and employment indicators. Meanwhile, the indicator of efficient use of natural resources, which has the most significant percentage, raises issues around tilapia fish farming training (based on local wisdom), which is expected to reduce stunting, Special Economic Zone (SEZ), coral reef planting and mangrove planting to anticipate abrasion and erosion, yellowfin tuna exports, to optimization in building sustainable marine tourism. The content of the news that is summarized in the local resource empowerment indicator, in addition to tilapia cultivation based on local wisdom to reduce stunting, SEZ, sustainable marine tourism, and yellowfin tuna exports that have reached the markets of the United States and the European Union, is also raised about the diversity of marine culinary known as marine dishes. As for the non-waste indicator promoted by the blue economy, where there is no waste in the circulation of the production-consumption system, it is not the opposite. This mainly boils down to the discourse on permits to dispose of processed waste in the form of sludge (tailings) from the nickel laterite smelting method (hydrometallurgical process) high-pressure acid leaching (HPAL) into the sea. The non-waste (circular) indicator has been the leading indicator in the concept of the blue economy since it was first launched by Gunter Pauli (Rahmadi, 2021).

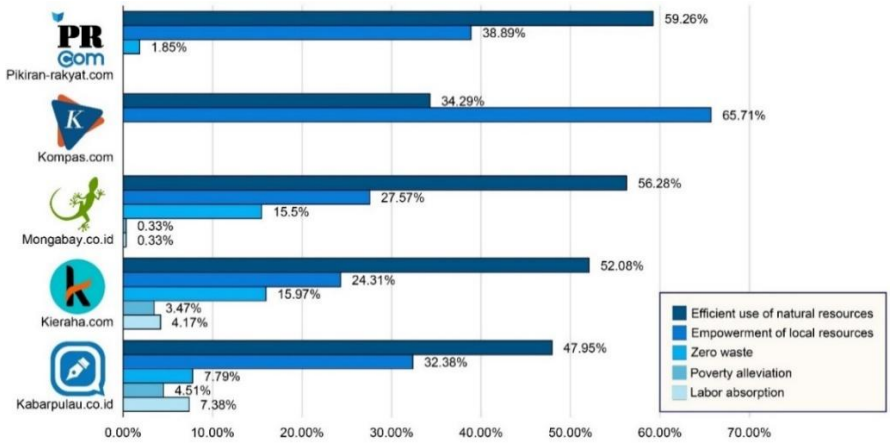

Figure 3. News intensity on the blue economy in North Maluku

In Kompas.com media, indicators of non-waste, poverty alleviation, and employment, no news content was found whose meaning was summarized in these three indicators. The dominant local resource empowerment indicator in Kompas.com's news raises issues about the utilization of Kucing beach as a tourist spot, the promotion of the edu-ecotourism concept at the Tanjung Waka Festival (FTW) to develop community-based tourism, efforts to make Tidore marine tourism in the future, to the use of shells (Fu musical instrument) as a musical instrument and dive guide training in order to hone competencies and skills for the development of North Maluku tourism. As for the node of indicators of efficient use of natural resources, it has several similarities with indicators of local resource empowerment, except for the issue of natural wealth (land and sea) of North Maluku, which is sought to become a new investment hope.

Meanwhile, as a media that provides news, analysis, and other information related to the environment and was launched and operated in April 2012, Mongabay.co.id touched on many issues while providing many long notes related to issues related to the pillars of environmental, social, and economic development (including law and governance) in the blue economy framework in North Maluku. In the indicator of efficient use of natural resources, the news raised are issues around reclamation, careless mangrove planting, mangrove land conversion, utilization of mangrove forests as tourist attractions, establishment of Mangrove Schools, application of sustainable fisheries principles by fair trade fishermen groups, polluted rivers and seas (murky in color), establishment of three Marine Tourism Parks (TWP) in North Maluku, conservation of turtles and Moluccan birds (mamua), introduction of environmental issues through Estuarine Classes, mass death of marine biota, violation of Fishing Areas (DPI), fishing that is not in accordance with sustainable principles (using bombs), sea level rise that almost devours small islands, licensing of trawl and cantrang as fishing gear which is feared to kill local fishermen with local fishing gear (huhate and pajeko), loss of water sources, piles of garbage that fill the coastline, the phenomenon of dugong deaths that have occurred since 2016, to the use of shells as works of art.

Because one issue can cover more than one indicator, some issues summarized in the indicator of efficient use of natural resources are also included in the indicator of local resource empowerment. Meanwhile, the same was found for the non-waste indicator, where circular production-consumption efforts are minimal. The issues raised are the problem of garbage scattered on the coast and the surface and in the sea, polluted rivers and seas due to household and industrial waste, and the use of fish bombs and potassium, which can interfere with human health if consumed because it contains harmful substances. The utilization of marine resources that genuinely meet the non-waste indicator is limited to the utilization of various shells for works of art.

In the poverty alleviation indicator, in addition to discussions related to the vast North Maluku ocean that can be converted into a source of economic income, which in turn can have implications in reducing poverty, another issue that was also mentioned was the issue of mining company activities which had implications for the loss of fishermen's fishing areas due to polluted seas. Losing fishermen's fishing areas is considered a process of impoverishing residents. Meanwhile, in the employment indicator, the issues mentioned are related to the expectations of some fishermen in the presence of mining companies that are allegedly able to reduce unemployment (but, in fact the opposite), as well as the formation of foster groups in honing the creativity of young people to be able to manage waste (including shells).

Furthermore, as in the media Pikiran-rakyat.com and Mongabay.co.id, local media Kieraha.com also has a large percentage in the indicator of efficient use of natural resources. The news that is summarized in the indicator of efficient use of natural resources is the issue of coastal reclamation, protection and restoration of

mangroves to ward off abrasion and become a place for various biota to live, sustainable management of ecosystems and marine resources, the rise of mining activities that produce waste and have an impact on coastal and marine areas, abrasion, exporting yellowfin tuna abroad, marine ecosystems that are still maintained on several small islands, illegal FADs, conflicts in fishing areas between local fishermen and Inka Mina Ship fishermen (Inka Mina Ship gets an operating permit from the center), coastal arrangement, Maluku expedition, Tanjung Waka Festival (FTW), damage to old coral reefs affected by ship anchors, the establishment of three marine areas in North Maluku as Marine Protected Areas, the potential of North Maluku aquaculture that has not been maximized, the National Fish Barn (LIN) program, violations of fishing areas, and education on marine protected areas. Meanwhile, in the indicator of local resource empowerment, the news that intersects, some of which are also included in the indicator of efficient use of natural resources.

The issues discussed are about tuna species in the North Maluku Sea, the first export of yellowfin tuna abroad (destination Vietnam), the arrangement of Sulamadaha beach, the LIN program, FTW, the establishment of three marine areas in North Maluku as Marine Protected Areas, to cases of illegal fishing. On the non-waste indicator, the news coverage also does not reflect non-waste in the blue economy principle because the contents of the news explain that the production-consumption system still needs to be circular. This can be seen from the issues raised, namely the scattering of garbage in coastal and marine areas, the disposal of industrial waste into the sea and bay, to the results of the Galela Lake water sample test, which was confirmed to be unfit for consumption and its biota which if consumed could endanger health. This also confirms that there is no zero waste principle in the blue economy in the news coverage.

Furthermore, on the poverty alleviation indicator, the content of the Kieraha.com media coverage is about the increasing poverty rate in North Maluku and assistance from the USAID SEA program, which, according to the Secretary General of the MMAF, Antam Novambar, can support the MMAF's mission in improving the welfare of coastal communities. The content of the news is then summarized in the employment indicator, namely the news about the increasing unemployment rate, the establishment of water areas that can provide opportunities to support the regional economy, especially communities in the water area due to tourist visits that can be in direct contact with Marine Protected Areas, as well as the provision of boats (ketinting) that can support the fishing activities of small fishermen, and increased understanding of environmental sustainability which can transform into a source of community economic income for now and the future.

Finally, in the media, Kabarpulau.co.id, the content of the news that was then summed up was a discourse on reclamation, abrasion, the use of mangrove forests as tourist attractions, the potential of fisheries and marine resources that could not be maximized (even though of the 11 Fisheries Management Areas (WPP) in Indonesia, North Maluku is included in 4 WPP), sea level rise that almost devoured small islands, cleaning the coast from scattered garbage, the activities of dibo-dibo (fish collectors) in ports and traditional markets, waste disposal into watersheds, efforts to collaborate with investors for the development of the fisheries sector, ecological education through the Estuaria Class, excessive canary crab potential, massive sand extraction on the coast, plans to enforce cantrang and trawl fishing gear which are feared to kill local fishermen who use huhate and pajeko fishing gear, North Maluku as the center of the world's coral reef triangle, coral reef ecosystems in several areas that are still maintained and have great potential, efforts to apply sustainable fisheries principles by fair trade fishermen groups, to the discourse on the presence of the mining industry which is considered to threaten coastal conditions on small islands.

In the indicator of local resource empowerment, the news content that is then summarized is part of the issues summarized in the indicator of efficient use of natural resources, such as the use of mangrove forests as tourist attractions, the potential of fisheries and maritime affairs that cannot be maximized, the activities of dibo-dibo (fish collectors) in ports and traditional markets, North Maluku as the center of the world's coral reef triangle, coral reef ecosystems in several areas that are still maintained and very potential, to the news about the planned implementation of cantrang and trawl fishing gear which is feared to kill local fishermen who use huhate and pajeko fishing gear. In the non-waste indicator, the issues raised are the problem of massive waste disposal, the rampant garbage on the coast and sea (including waste removal activities), the disposal of waste into watersheds to the coast and sea, the application of sustainable fisheries principles by fair trade fishermen groups which are intended to maintain marine ecosystems. On the poverty alleviation indicator, the news content related to the existence of mangroves that can allegedly contribute to poverty alleviation, production efforts that should be clean from upstream to downstream in order to improve the welfare of the surrounding community, the abundant fisheries and marine potential but cannot be utilized for the welfare of the community, to dibo-dibo activities in ports and traditional markets. Meanwhile, on the indicator of employment, the issues that intersect are news about the rejection of the Job Creation Law because it is full of free market labor, the diversity of coastal and marine potential that has not been optimized as a source of community economy, the activities of dozens of dibo-dibo in ports and traditional markets, to efforts to utilize tourist sites that are emphasized in village communities.

Overall, on average, the five online news media used in this study have a large percentage of criticizing activities that do not consider environmental factors and curb social aspects, where activities and policies taken

are often detrimental to small communities. This can be seen, for example, in issues surrounding reclamation, conversion of forest and coastal land into infrastructure, disposal of industrial waste into watersheds, which then flow into the coast and sea, to activities carried out by the community itself such as indiscriminate disposal of garbage/waste, and impact on coastal and marine ecosystems. For example, in the research of Najamuddin et al. (2020), it was found that the waters of Ternate City were polluted with waste by anthropogenic activities, even given a heavily polluted status. Furthermore, the reporting carried out by these five online news media also confirms that blue economy indicators in the framework of sustainable development goals often do the opposite. However, on several occasions, people also practice the principles of sustainable fisheries and maritime affairs, as practiced by fair trade fishermen groups.

The five online news media, Kompas.com and Pikiran-rakyat.com are two media that are not too critical in reporting phenomena in North Maluku because they tend to be very positive in reporting ecological and social phenomena in North Maluku. This is, of course, different from the news media Mongabay.co.id, Kieraha.com, and Kabarpulau.co.id, which report a lot of long notes related to environmental issues in North Maluku, especially about the phenomenon of the blue economy in the framework of sustainable development. The areas mentioned by the five online news media (based on indicators) (Table 2).

Table 2. Specification of news coverage on the blue economy in North Maluku

Media	Indicators	News count	Area
PR Gom Pikiran-rakyat.com	Efficient use of natural resources	17 news	Obi Island (South Halmahera) North Halmahera, West Halmahera, Morotai Island, dan Tidore Islands North Maluku (in general)
	Empowerment of local resources	11 news	North Halmahera, West Halmahera, Morotai Island, and Tidore Islands North Maluku (in general)
	Zero waste	1 news	Obi Island (South Halmahera)
	Poverty alleviation	-	-
	Labor absorption	-	-
Kompas.com	Efficient use of natural resources	6 news	Kucing Island and Cape Waka (Sula Islands) Pangeo (Morotai Island) Soa Sio and Tongowai (Tidore Islands) North Maluku (in general)
	Empowerment of local resources	7 news	Kucing Island dan Cape Waka (Sula Islands) Soa Sio and Tongowai (Tidore Islands) Ternate City North Maluku (in general)
	Zero waste	-	-
	Poverty alleviation	-	-
	Labor absorption	-	-
Mongabay.co.id	Efficient use of natural resources	44 news	Weda and Gebe Island (Central Halmahera) Obi Island and Gane, and Tawabi (South Halmahera) Simau, Kao, and Mamuya (North Halmahera) Maba (East Halmahera) Rao Island (Morotai Island) Pagama Island (Sula Islands) Talo (Taliabu Island) Kastela and Tafure (Ternate City) Mare Island and Guraping (Tidore Islands) Halmahera Island, Central Halmahera, Sula Islands, Morotai Island, Ternate City, and Tidore Islands North Maluku (in general)
	Empowerment of local resources	31 news	Weda and Gebe Island (Central Halmahera) Obi Island and Tawabi (South Halmahera) Maba (East Halmahera) Simau and Kao (North Halmahera) Rao Island (Morotai Island) Talo (Taliabu Island) Kastela (Ternate City) Mare Island and Guraping (Tidore Islands) Central Halmahera, Morotai Island, Sula Islands, Ternate City, dan Tidore Islands North Maluku (in general)
	Zero waste	27 news	Weda and Gebe Island (Central Halmahera) Obi Island, Gane, and Tawabi (South Halmahera) Maba (East Halmahera) Jambula, Kastela, and Tafure (Ternate City) Halmahera Island, Taliabu Island, and Ternate City North Maluku (in general)
	Poverty alleviation	2 news	Weda (Halmahera Tengah) Maluku Utara (in general)

Media	Indicators	News count	Area
	Labor absorption	2 news	Weda (Central Halmahera) Tafure (Ternate City)
	Efficient use of natural resources	39 news	Weda and Gebe Island (Central Halmahera) Widi Island, Guraici Island, Makian Island, Obi Island, Sali Island, Panambuang, West Gane, and Kayoa (South Halmahera) Tobelo (North Halmahera) Rao Island and Cape Dehegila (Morotai Island) Cape Waka and Wainin (Sula Islands) Sulamadaha, Rua, Gamalama, Kalumata, and Moti Island (Ternate city) Mare Island, Payahe, Tadupi, Balbar, Toseho, Lola, and Guraping (Tidore Islands) South Halmahera, Central Halmahera, West Halmahera, North Halmahera, Morotai Island, Sula Islands, Ternate City, and Tidore Islands North Maluku (in general)
	Empowerment of local resources	22 news	Panambuang, Widi Island, Guraici Island, and Makian Island (South Halmahera) Tobelo (North Halmahera) Rao Island and Cape Dehegila (Morotai Island) Wainin and Cape Waka (Islands) Sulamadaha (Ternate City) Mare City, Tadupi, Toseho, and Lola (Tidore Islands) South Halmahera, West Halmahera, North Halmahera, Morotai Island, Sula Islands, Ternate City, and Tidore Islands North Maluku (in general)
	Zero waste	13 news	Obi Island (South Halmahera) Gebe Island (Central Halmahera) Maba (East Halmahera) Seki, Togawa, Soa Konora, Igo Bula, Ori Bale, Kota Baru, Doku Lamo, Kira, Duma, and Makete (North Halmahera) Gamalama (Ternate City) Guraping (Tidore Islands) Ternate City North Maluku (in general)
	Poverty alleviation	3 news	East Halmahera North Maluku (in general)
	Labor absorption	5 news	Widi Island, Guraici Island, Makian Island (South Halmahera) Moti Island (Ternate City) Tadupi and Balbar (Tidore Islands) North Maluku (in general)
	Efficient use of natural resources	29 news	Obi Island and Makian Island (South Halmahera) Weda and Mtu Mya Island (Central Halmahera) Gamtala (West Halmahera) Mitita Island (Morotai Island) Pagama Island (Sula Islands) Dufa-Dufa, Kalumata, Mangga Dua, Jambula, Falajawa, and Kastela (Ternate City) Guraping and Sofifi (Tidore Islands) Ternate Islands North Maluku (in general) Indonesia (in general)
	Empowerment of local resources	21 news	Obi Island (South Halmahera) Weda (Central Halmahera) Gamtala (West Halmahera) Galela (North Halmahera) Mitita Island (Morotai Island) Pagama Island (Sula Islands) Kastela, Dufa-Dufa, Mangga Dua, and Jambula (Ternate City) Guraping (Tidore Islands) Ternate City North Maluku (in general) Indonesia (in general)
	Zero waste	7 news	Obi Island (South Halmahera) Weda (Central Halmahera) Kastela and Falajawa (Ternate City) Ternate City
	Poverty alleviation	6 news	Obi Island (South Halmahera) Kao (North Halmahera) Dufa-Dufa, Bastiong, Gamalama, and Rua (Ternate City) North Maluku (in general)
	Labor absorption	8 news	Mtu Mya Island (Central Halmahera) Dufa-Dufa, Bastiong, Gamalama, and Rua (Ternate City)

Media	Indicators	News count	Area
			North Maluku (in general)

From Table 2, the regions that are often mentioned in every online news media are South Halmahera, Ternate City, and Tidore Islands City. This is certainly in line with data from the Central Statistics Agency (BPS) in 2024, where Ternate City is the area with the most significant volume of capture fisheries in North Maluku, followed by South Halmahera and Tidore Islands City (BPS Maluku Utara, 2024). Other areas that are also often mentioned are Obi and Gane Islands (South Halmahera) and Weda and Gebe Islands (Central Halmahera) because these areas are mining and oil palm areas (oil palm in Gane), where mining activities and oil palm plantations pollute rivers, coasts, and the sea. Furthermore, Morotai Island, mentioned in the news media, is about Morotai Island, which is used as a Special Economic Zone (SEZ). On the other hand, Morotai Island, together with Tidore Islands City and Sula Islands, were mentioned in the news, related to the establishment of three Marine Tourism Parks (TWP) by the Minister of Maritime Affairs and Fisheries, namely TWP Mare Island and surrounding waters, TWP Rao Tanjung Dehegila Island, and coastal conservation areas and Sula Islands Small Islands and surrounding waters (Ichi, 2020a).

Meanwhile, North Maluku, in general, is intended here to represent North Maluku's efforts as a National Fish Barn (LIN) (Ichi, 2020b). As for the news about efforts to implement sustainable fisheries principles in Ternate City (including the phenomenon of massive coastal reclamation), which is cultivated by fair trade fishermen groups, as well as areas such as Tidore Islands City (also Ternate City), North Halmahera, and West Halmahera, some of the news talks about mangrove logging and conservation, and discourse about rising sea levels that are almost devouring small islands in North Maluku, one of which is Pagama Island in the Sula Islands. This strengthens research of Brears, (2021) that from year to year, the area of mangrove forests is increasingly degraded. This is evidenced by the migration of many birds that initially inhabited the mangrove forest in Mangga Dua, Ternate.

In addition to these discourses, other discourses mentioned were the issue of tilapia aquaculture training to reduce stunting based on local wisdom (North Halmahera and West Halmahera), fin tuna exports that have entered the United States and European Union markets, dive guide training in order to develop North Maluku tourism (Ternate City), the high volume of waste on the coast, surface and in seawater (Ternate City), mass mortality of marine biota (Halmahera Island and Ternate), and environmental awareness movements through ecological discourses. Furthermore, the utilization of seashells as artworks (Ternate) and Fu musical instruments is mentioned, which confirms research Magalhães et al. (2024), that communities can utilize waste into reusable and economically valuable materials/works.

Meanwhile, this research contradicts research conducted by (Martínez-Vzquez et al. (2021) where the integration of blue economy-based regional development with land development programs that can be useful for accelerating the development of the islands does not work in North Maluku. Mining areas in Weda, Gebe Island, Maba, and Obi Island, often mentioned in the news, despite being the most significant contributor to the North Maluku economy, are also considered extractive industries that impoverish the people of North Maluku. In addition, there is no integration between mining (green economy) and marine-based blue economy in North Maluku because the waste from nickel processing ends up in the sea and pollutes the sea in areas with mines.

The authors not only examines the extent to which online news media discuss the concept of a blue economy within the context of sustainable development, encompassing environmental, social, economic, legal, and governance aspects, but also analyzes the specific topics that are most commonly covered by Pikiran-rakyat.com, Kompas.com, Mongabay.co.id, Kieraha.com, and Kabarpulau.co.id. During the word frequency analysis conducted with NVivo 12 plus, it was found that out of 147 news reports from five online news media, the most commonly discussed topics related to the blue economy include fish, sea, fishermen, fisheries, mangroves, waters, beaches, rivers, coastal areas, and the environment. The most frequently discussed topics in the news by the five-news media can be observed in Table 3 & Figure 4. The size of each topic in the figure is directly proportional to the number of times it is mentioned in the news.

Figure 4. Dominant topics on blue economy in North Maluku

Table 3. List of dominant topics on blue economy in North Maluku

Word	Count	Word	Count
ikan (fish)	1037	pemerintah (government)	386
laut (marine/sea)	1000	Indonesia	378
nelayan (fisherman)	922	halmahera	376
utara (north)	854	karang (coral)	337
maluku	795	tuna	333
perikanan (fishery)	716	warga (society)	333
pulau (island)	673	wilayah (region)	332
mangrove	615	pantai (beach)	328
kawasan (area)	598	daerah (area)	309
ternate	515	kapal (boat)	300
air (water)	457	konservasi (conservation)	291
sampah (rubbish)	447	kota (city)	279
desa (village)	424	sungai (river)	258
masyarakat (society)	409	pesisir (coast)	255
perairan (waters)	391	lingkungan (environment)	233

From the results of word frequency using NVivo 12 plus software conducted on the news about the blue economy in North Maluku, as shown in Table 3 and Figure 4 above, it can be understood that the issues most frequently discussed by the five-news media are issues that talk about the richness of North Maluku's marine resources, as well as efforts to apply sustainable fisheries principles, and the high volume of waste. This can be seen in topics such as fish, sea, fishermen, fisheries, ternate, waste, waters, Halmahera, tuna, beach, river, and coast. These topics are mostly mentioned by Mongabay.co.id, Kieraha.com, and Kabarpulau.co.id. Meanwhile, the topics mentioned by Pikiran-rakyat.com and Kompas.com tend to be evenly distributed, such as the topics of fisheries, islands, mangroves, corals, and tuna. Mangroves themselves are among the most mentioned, considering that mangroves are one of the pillars of blue economy development (Mahmud, 2018). As an area dominated by the sea, it is not surprising that mangroves are included in the top list of discourse on the blue economy in North Maluku. In Guraping for example, research results from Angkotasan & Marasabessi (2019) found 16 types of mangroves identified in the Guraping mangrove forest. This wealth also invited online news media to cover the mangrove ecosystem in Guraping so that it was included in the top list of blue economy discourse in North Maluku. In addition, the abundant potential of North Maluku mangroves also confirms research Mahmud (2018), where increasing mangrove rehabilitation on a blue economy basis is vital in supporting the North Maluku maritime axis program. Ternate and Halmahera were included as the most frequently mentioned topics/words because Ternate and Halmahera are the two areas that have the largest volume of fish caught in North Maluku (BPS Maluku Utara, 2024).

Furthermore, after reducing the data that has been collected, the author also analyzes the closeness of the relationship between indicators, using Pearson's correlation in the cluster analysis feature in the NVivo 12 plus software. Pearson correlation itself is a statistical analysis tool used to measure the closeness of the linear relationship between two indicators/variables. The value interval in the Pearson correlation coefficient is between -1 and 1, where if the correlation coefficient value is closer to 1, the level of relationship between indicators/variables is stronger, and vice versa (Miller & Graham, 2025). The visualization of the relationship between indicators can be seen in Figure 5.

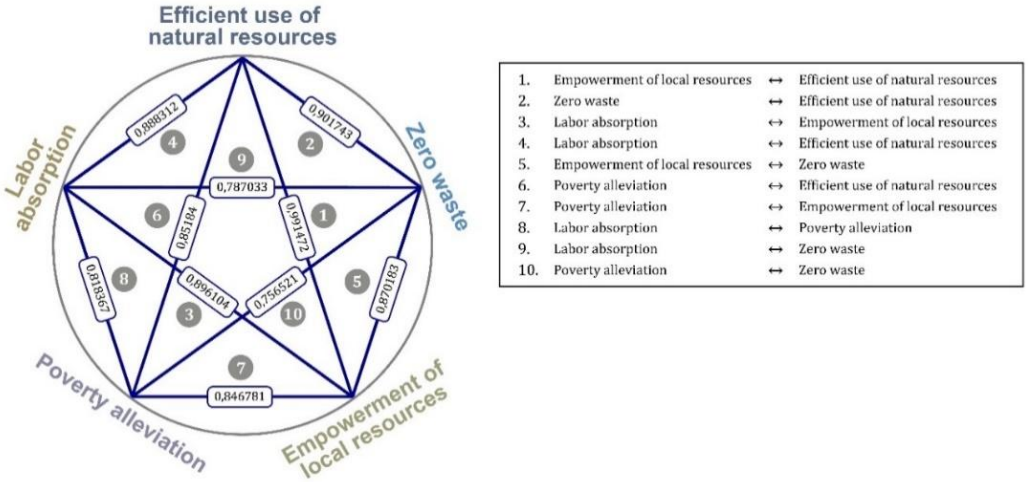

Figure 5. Correlation between indicators

Positive and negative signs on the correlation coefficient indicate the direction of the relationship, whereas a positive sign means that the relationship between indicators/variables is directly proportional. In contrast, a negative sign means that the relationship between indicators/variables is inversely proportional. Meanwhile, for the interpretation of its value, the Pearson correlation coefficient has a value interpretation: 0 to 0.2 (very weak relationship), 0.2 to 0.4 (weak relationship), 0.4 to 0.7 (moderately strong relationship), 0.7 to 0.9 (strong relationship), 0.9 to 1 (very strong relationship). From Figure 5 and Table 3 above, each indicator has a relationship with different levels of relationship closeness values. The indicators that have a very strong relationship with each other are the local resource empowerment - natural resource efficiency indicator and the non-waste - natural resource use efficiency indicator. Meanwhile, other indicators also have a strong relationship with each other because they have a value interval from 0.7 to 0.9.

The close connection between the indicators of local resource empowerment-efficient use of natural resources, as well as the indicators of non-waste-efficient use of natural resources, is a dominant representation in the online news media Mongabay.co.id, Kieraha.com, and Kabarpulau.co.id, regarding the pollution of rivers, lakes, coasts, and seas due to industrial waste (mining and oil palm) and households that are the result of activities on land (especially in Central Halmahera, South Halmahera, North Halmahera, and Ternate City). This, of course, relates to the definition of the blue economy according to Prof. Dr. Tridoyo Kusumantato (2012) (Rani & Cahyasari, 2015), that the blue economy is an economic activity in coastal and marine areas supported by mainland economic activities that provide prosperity for the community and can sustainably take place. Although it is in line with research (Saksono, 2013) that activities on land, such as mining, can ultimately make the largest contribution to the North Maluku economy in the sense that it is useful for accelerating the development of the islands, this is in contrast to the fact that the communities around the mining area, feel the adverse effects of mining activities and even further impoverish the community (Ichi, 2022). This certainly does not reflect the three basic initiatives of the blue economy, namely economic, social, and environmental development (Rini et al., 2022), and the community as the center of the movement of blue economy development (Setyawati et al., 2021).

Furthermore, by looking at the distribution of news carried out by the five online news media based on blue economy indicators, it can be used as a basis for reference to determine areas that require special attention and further optimize blue economy indicators such as efficient use of natural resources, empowerment of local resources, non-waste, poverty alleviation, and employment based on the news carried out by the five-news media. This optimization can be started by intensifying the socialization of the implementation of the blue economy (Septiandika et al., 2022) so that it can be emulated by other regions in North Maluku. The implementation of sustainable fisheries by fishermen in Ternate City can be used as a reference for implementing sustainable marine and fisheries development based on the blue economy (Radiarta et al., 2015; Sumarmi et al., 2020), as reported by Mongabay.co.id. In that case, the government must provide clear regulations to cluster fishing gear so as not to kill local fishermen who use pajeko and huhate (local fishing gear) because local fishing gear such as pajeko and huhate are very much in line with the application of the blue economy concept (Setyawati et al., 2021). Meanwhile, the increase in residents' economic income caused by the reorganization of tourist destinations in Sulamadaha Beach (as reported by Kieraha.com) can be used as a reference for other tourist destinations in North Maluku because tourism has a direct relationship with the blue economy (Kabil et al., 2021), so that the rearrangement of tourist destinations on Sulamadaha Beach (Tanjung Waka festival in the Sula Islands), can be emulated by other areas such as Dodola in Morotai and Widi Island in South Halmahera. Of course, all these activities covered by the media must be of concern to local governments so that they immediately produce strict regulations on the implementation of sustainable development based

on the blue economy so that socio-economic development from environmental degradation can be achieved as early as possible, in addition to its benefits for future generations.

4. Conclusion

Blue economy is a concept outlined in the SDGs, in which the pillars of environmental, social, and economic development, supported by the pillars of legal development and governance, are integrated into a whole without being separated. In this sense, economic development does not neglect environmental factors and aims to reduce social inequality. Based on the explanation of the findings above, this study concludes that the online news media that most often reports on the blue economy is Kieraha.com. At the same time, the most dominant indicator is the indicator of efficient use of natural resources in the media: Pikiran-rakyat.com, Mongabay.co.id, Kieraha.com, and Kabarpulau.co.id. At the same time, the dominant indicator in Kompas.com media is the indicator of local resource empowerment. In the word frequency analysis on the concept of blue economy, the topics most frequently reported by the five online news media were fish, sea, fisheries, mangrove, waste, coral, beach, conservation, and coastal. The list of topics that are often reported can be seen, and most of them are related to the problems of fisheries management, mangroves, and increasingly rampant littering.

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References

Alam, M. K. (2021). A systematic qualitative case study: questions, data collection, NVivo analysis and saturation. *Qualitative Research in Organizations and Management: An International Journal*, *16*(1), 1–31. https://doi.org/10.1108/QROM-09-2019-1825

Alhusain, A. S., Mauleny, A. T., Sayekti, N. W., Lisnawati, & Adhiem, M. A. (2019). *Kebijakan Pembangunan Ekonomi Kelautan Indonesia: Quo Vadis?* Yayasan Pustaka Obor Indonesia.

Allsop, D. B., Chelladurai, J. M., Kimball, E. R., Marks, L. D., & Hendricks, J. J. (2022). Qualitative Methods with Nvivo Software: A Practical Guide for Analyzing Qualitative Data. *Psych*, *4*(2), 142–159. https://doi.org/10.3390/psych4020013

Angkotasan, A. M., & Marasabessi, H. (2019). Kondisi Ekologi Mangrove Di Perairan Guraping, Kota Tidore Kepulauan Provinsi Maluku Utara. *Jurnal Ilmu Kelautan Kepulauan*, *2*(2), 32–39.

Augusto, A., Lemos, M. F. L., & Silva, S. F. J. (2024). Exploring Marine-Based Food Production : The Challenges for a Sustainable and Fast Biotechnology-Based Development. *Applied Sciences*, *14*, 1–12.

Ayuningtyas, D. A. (2018). Kepentingan Indonesia dalam Indian Ocean Rim Association (IORA) Tahun 2015. *E-Journal Hubungan Internasional*, *6*(1), 1–16.

Bari, A. (2017). Our Oceans and the Blue Economy: Opportunities and Challenges. *Procedia Engineering*, *194*, 5–11. https://doi.org/10.1016/j.proeng.2017.08.109

BPS Maluku Utara. (2024). *Provinsi Maluku Utara dalam Angka 2024*.

Brears, R. C. (2021). Developing the blue economy. In *Developing the Blue Economy*. https://doi.org/10.1007/978-3-030-84216-1

Chandra, Y. A., Rustam, I., & Safitri, P. (2021). Implementasi Kebijakan Berbasis Blue Economy dalam Kerangka Kerjasama Pemerintah Indonesia dengan FAO: Studi Mengenai Unit Pengolahan Ikan di Kabupaten Lombok Utara. *IJGD: Indonesian Journal of Global Discourse*, *3*(1), 1–19.

Chen, S., Bruyne, C. De, & Bollempalli, M. (2020). Blue Economy: Community Case Studies Addressing the Poverty–Environment Nexus in Ocean and Coastal Management. *Sustainability*, *12*(4654), 1–18.

Dai, T. (2025). Delving into the green growth dilemma and ESG investing in Southeast Asia. *Humanities and Social Sciences Communications*, *12*(1), 1–8. https://doi.org/10.1057/s41599-024-04184-x

Das, J. (2023). Blue Economy, Blue Growth, Social Equity and Small-scale Fisheries: A Global and National Level Review. *Studies in Social Science Research*, *4*(1), p38. https://doi.org/10.22158/sssr.v4n1p38

Dobrowolski, Z., Drozdowski, G., Janjua, L. R., Panait, M., & Szołtysek, J. (2025). Econometric Analysis of BRICS Countries' Activities in 1990–2022: Seeking Evidence of Sustainability. *Energies*, *18*(3). https://doi.org/10.3390/en18030656

Elston, J., & Pinto, H. (2024). Tides of Change for a Sustainable Blue Economy: A Systematic Literature Review of Innovation in Maritime Activities. *Sustainability*, *16*, 1–27.

Ervianto, W. I. (2018). Studi Pendekatan Ekonomi Biru untuk Infrastruktur di Indonesia. *Seminar Nasional Sains Dan Teknologi 2018*, 1–7.

Galdolage, B. S., Ekanayake, E. A., Daoud, K. I. A.-, Vasudevan, A., Wenchang, C., Faleh, M., Hunitie, A., Ibrahim, S., & Mohammad, S. (2024). Leveraging Aquaculture and Mariculture for Sustainable Economic Growth in Sri Lanka: Challenges and Opportunities. *Journal of Ecohumanism*, *3*(6), 1229–1247.

Haikal, M. V., Taofiqurohman, A., & Riyantini, I. (2012). Analisis Massa Air di Perairan Maluku Utara. *Jurnal Perikanan Dan Kelautan*, *3*(1), 1–9.

Hasyim, M., Abbas, I., Qurrata, V. A., & Yusida, E. (2025). Sustainable Development in Coastal Regions: Integrating Blue Economy and Community Ecotourism for Poverty Eradication. *Environment and Ecology Research*, *13*(2), 198–212. https://doi.org/10.13189/eer.2025.130202

Ichi, M. (2020a). *Ditetapkan Tiga TMP di Malut, Sumbang Target 20 Juta Hektar Kawasan Konservasi*. Mongabay.Co.Id. https://www.mongabay.co.id/2020/07/17/ditetapkan-tiga-tmp-di-malut-sumbang-target-20-juta-hektar-kawasan-konservasi/

Ichi, M. (2020b). *Program Lumbung Ikan Malut, Pemerintah Diminta Prioritaskan Nelayan Kecil*. Mongabay.Co.Id. https://www.mongabay.co.id/2020/10/01/program-lumbung-ikan-malut-pemerintah-diminta-prioritaskan-nelayan-kecil/

Ichi, M. (2022). *Tambang 'Unggul' di Maluku Utara: Ekonomi Tumbuh tetapi Daerah Tak Rasakan Hasil, Warga Miskin*. Mongabay.Co.Id. https://www.mongabay.co.id/2022/06/08/tambang-unggul-di-maluku-utara-ekonomi-tumbuh-tetapi-daerah-tak-rasakan-hasil-warga-miskin/%0A

John, H. B., Agrawal, M., Nema, P., Hasan, A., Rakhra, I. K., & Singh, A. (2025). Green growth: a bibliometric analysis of digital innovation and Sustainable Development Goals (SDGs). *Journal of Innovation and Entrepreneurship*, *14*(15), 1–18. https://doi.org/10.1186/s13731-025-00473-0

Kabil, M., Priatmoko, S., Magda, R., & Dávid, L. D. (2021). Blue Economy and Coastal Tourism: A Comprehensive Visualization Bibliometric Analysis. *Sustainability*, *13*(3650), 1–25. https://doi.org/10.3390/su13073650

KKP.go.id. (2013). *Inventarisasi Peredaran Jenis Ikan di Maluku Utara Tahun 2012*. KKP.Go.Id. https://kkp.go.id/djprl/lpsplsorong/artikel/11162-inventarisasi-peredaran-jenis-ikan-di-maluku-utara-tahun-2012

KKP. (2012). Kebijakan Ekonomi Kelautan Dengan Model Ekonomi Biru. In *Kementerian Kelautan dan Perikanan* (p. ix + 67 hlm). Kementerian Kelautan dan Perikanan. https://www.academia.edu/download/37619342/Lap._Kebijakan_Ekonomi_Kelautan_dengan_Model_Ekonomi_Biru.pdf

Laurensius, Setiani, M. F. D. A., Harryes, R. K., & Ras, A. R. (2020). Pengembangan Kawasan Industri Pelabuhan Internasional (KIPI) Maloy Untuk Mendukung Blue Economy. *Nusantara: Jurnal Ilmu Pengetahuan Sosial*, *8*(1), 69–83.

Lim, W. M. (2024). What Is Qualitative Research? An Overview and Guidelines. *Australasian Marketing Journal*. https://doi.org/10.1177/14413582241264619

Louey, P. (2022). The blue economy's retreat from equity: A decade under global negotiation. *Frontiers in Political Science*, *4*. https://doi.org/10.3389/fpos.2022.999571

Magalhães, F. C., Bellei, P., Flores-Colen, I., & da Costa, E. M. (2024). Blue Circular Economy—Reuse and Valorization of Bivalve Shells: The Case of Algarve, Portugal. *Recycling*, *9*(2), 1–17. https://doi.org/10.3390/recycling9020027

Mahmud, M. A. (2018). Gerakan Hijau di Arus Poros Maritim (Rehabilitasi Mangrove Maluku Utara Sebagai Pilar Ekonomi Biru). *Prosiding Seminar Nasional KSP2K II*, *1*(2), 112–121. http://keuanganlsm.com/membumikan-gerakan-hijau/22

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), 1–17. https://doi.org/10.1186/s12302-021-00502-1

McKinley, E., Kelly, R., Mackay, M., Shellock, R., Cvitanovic, C., & van Putten, I. (2022). Development and expansion in the marine social sciences: Insights from the global community. *IScience*, *25*(8), 104735. https://doi.org/10.1016/j.isci.2022.104735

Miller, K., & Graham, C. (2025). Hydrogen Hub Potential in the Caribbean : Towards a Sustainable Future. *Sustainable Marine Structures |*, *07*(01), 52–65.

Mira, Firdaus, M., & Reswati, E. (2014). Penerapan Prinsip Blue Economy pada Masyarakat Pesisir di Kabupaten Brebes, Jawa Tengah. *Buletin Riset Sosek Kelautan Dan Perikanan*, *9*(1), 17–23.

Najamuddin, Kasim, I. J., Baksir, A., Paembonan, R. E., Tahir, I., & Lessy, M. R. (2020). Kualitas Perairan dan Status Pencemaran Perairan Pantai Kota Ternate. *Jurnal Ilmu Kelautan Kepulauan*, *3*(1), 35–45.

Nguyen, N. B. (2024). How does a sustainable ocean economy affect national GDP? *Cogent Economics & Finance*, *12*(1), 1–15. https://doi.org/10.1080/23322039.2024.2435926

Nikčević, J., & Škurić, M. (2021). A contribution to the sustainable development of maritime transport in the context of blue economy: The case of Montenegro. *Sustainability (Switzerland)*, *13*(6). https://doi.org/10.3390/su13063079

Nursita, L. (2020). Menggagas Pembangunan Blue Economy Terumbu Karang; Sebuah Pendekatan Sosial Ekonomi. *EcceS (Economics, Social, and Development Studies)*, *7*(1), 62–86. https://doi.org/10.24252/ecc.v7i1.13730

Prihatin, P. S., Rusadi, S., & Riyanto, S. (2025). Governmentality in Management of Coastal and Border Areas Based on Blue Economy in Riau Province. *International Journal of Sustainable Development and Planning*, *20*(3), 1309–1316.

Rahardjo, D. T., & Gurning, R. O. S. (2018). Development of marine and coastal tourism based on blue economy. *International Journal of Marine Engineering Innovation and Research, 2*(2), 128–132.

Radiarta, I. N., Erlania, & Haryadi, J. (2015). Analisis Pengembangan Perikanan Budidaya Berbasis Ekonomi Biru dengan Pendekatan Analytic Hierarchy Process (AHP). *Jurnal Sosial Ekonomi Kelautan Dan Perikanan*, *10*(1), 47–59. https://doi.org/10.15578/jsekp.v10i1.1247

Rahmadi, R. Y. G. (2021). Legal Issues on The Implementation of The Blue Economy in Indonesia. *Journal Philosophy of Law*, *2*(1), 27–33.

Rani, F., & Cahyasari, W. (2015). Motivasi Indonesia dalam Menerapkan Model Kebijakan Blue Economy Masa Pemerintahan Joko Widodo. *Jurnal Transnasional*, *7*(1), 1914–1928.

Rini, D., Burhan, S. Y., Agusalim, L., Panjaitan, M., Purwandaya, B., Abdullah, Z., & Pasaribu, B. (2022). Pemberdayaan Kaum Perempuan dalam Pengembangan Model Bisnis Berbasis Ekonomi Biru. *Jurnal KARINOV*, *5*(1), 70–74. http://journal2.um.ac.id/index.php/jki/article/view/26518

Rizky, M. C., Anwar, Y., Ardian, N., Pembangunan, U., Budi, P., Sumatera, N., & Email, I. (2025). The Gendered Dynamics of the Blue Economy : Women ' s Contribution to Sustainable Development in Coastal Communities. *International Review of Management and Marketing*, *15*(3), 150–163.

Saksono, H. (2013). Ekonomi Biru: Solusi Pembangunan Daerah Berciri Kepulauan Studi Kasus Kabupaten Kepulauan Anambas. *Jurnal Bina Praja*, *5*(1), 1–12. https://doi.org/10.21787/jbp.05.2013.01-12

Septiandika, V., Fitria, N. J. L., & Hanifah, E. (2022). Sosialisasi Blue Economy: Menanamkan Semangat Wirausaha yang Berwawasan Lingkungan di Kota Probolinggo. *Jurnal Pengabdian Nasional (JPN) Indonesia*, *3*(1), 39–50. https://doi.org/10.35870/jpni.v3i1.66

Setyawati, L. R., Hadistian, Cahya, D. D., Marsetio, Novarianti, A. D., & Said, B. D. (2021). Implementasi Konsep Ekonomi Biru dalam Pembangunan Masyarakat Pesisir di Kota Sabang. *Jurnal Education and Development*, *9*(4), 178–185.

Similarweb. (2025). *Top Websites Ranking: Most Visited News & Media Publishers Websites in Indonesia*. Similarweb.Com. https://www.similarweb.com/top-websites/indonesia/news-and-media/

Smith-Godfrey, S. (2016). Defining the Blue Economy. *Maritime Affairs*, *12*(1), 58–64. https://doi.org/10.1080/09733159.2016.1175131

Sukarniati, L., & Khoirudin, R. (2017). Analisis Kelembagaan Penerapan Konsep Blue Economy pada Tambak Udang (Studi Kasus di Dusun Ngentak Desa Poncosari Kecamatan Srandakan Kabupaten Bantul). *Jurnal Ekonomi Pembangunan*, *3*(2), 52–65. https://doi.org/10.35906/jep01.v3i2.198

Sumarmi, Kurniawati, E., & Aliman, M. (2020). Community Based Tourism (CBT) to Establish Blue Economy and Improve Public Welfare for Fishing Tourism Development in Klatak Beach, Tulungagung, Indonesia. *GeoJournal of Tourism and Geosites*, *31*(3), 979–986. https://doi.org/10.30892/gtg.3

Sundana, E. J., Sutadian, A. D., & Juwana, I. (2019). Zero Waste Management Index – Sebuah Tinjauan. *Creative Research Journal*, *5*(2), 55–62. https://doi.org/10.34147/crj.v5i2.217

Sutardjo, S. C. (2014). Kebijakan Pembangunan Kelautan dan Perikanan ke Depan. *Jurnal Kebijakan Perikanan Indonesia*, *6*(1), 37–42.

Wiratma, H. D., & Nurgiyanti, T. (2019). Pembangunan Pariwisata Kulon Progo Melalui Konsep Green Economy dan Blue Economy. *Nation State: Journal of International Studies*, *2*(2), 161–172. https://doi.org/10.24076/nsjis.2019v2i2.164

Zhou, G., Gao, J., Zhang, R., Yang, Z., Zhang, S., Wang, L., Su, Y., Huan, Y., & Liang, T. (2025). A new perspective for enhancing social and ecological systems coordination in ecological restoration. *Ecological Processes*, *14*(1). https://doi.org/10.1186/s13717-025-00588-y