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STRATEGY FOR DEVELOPING BLUE ECONOMIC POTENTIAL THROUGH SUSTAINABLE TOURISM IN THE COASTAL AREA OF SEMARANG CITY

STRATEGI PENGEMBANGAN POTENSI EKONOMI BIRU MELALUI PARIWISATA BERKELANJUTAN DI WILAYAH PESISIR KOTA SEMARANG

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ABSTRACT

Semarang City, the capital city of Central Java Province, holds significant potential for marine tourism developments due to its strategic location and various tourist destinations. However, this sector faces challenges in facilities, promotion, and management. This study was conducted from March to June 2024, and aims to analyze the potential for implementing a blue economy to support the development of marine tourism and contribute to formulating a blue economy-based strategy to support the development of sustainable marine tourism in Semarang City. The qualitative descriptive method with a case study approach applied data collection through interviews, observations, and literature reviews. Identification was carried out using a SWOT analysis to identify strengths, such as strategic location and diversity of destinations, as well as weaknesses in the form of limited facilities. Opportunities included the development of tourism packages and cultural events, while threats included environmental degradation and tidal flooding. Implementing a blue economy strategy can enhance marine tourism by improving promotional strategies, developing cultural and tourism events, and boosting conservation efforts, supported by improved management of facilities and infrastructure.

Keywords: blue economy, coast, Semarang, tourism

ABSTRAK

Kota Semarang sebagai ibu kota Provinsi Jawa Tengah, memiliki potensi besar dalam pengembangan pariwisata bahari karena lokasi yang trategis dan adanya berbagai destinasi wisata. Namun, sektor ini menghadapi tantangan dalam fasilitas, promosi, dan manajemen pengelolaan. Penelitian yang dilakukan dari Maret hingga Juni 2024 ini, bertujuan untuk menganalisis potensi penerapan *blue economy* untuk mendukung pengembangan pariwisata bahari dan berkontribusi dalam merumuskan strategi berbasis *blue economy* untuk mendukung pengembangan pariwisata bahari berkelanjutan di Kota Semarang. Metode deskriptif kualitatif dengan pendekatan studi kasus menerapkan pengumpulan data melalui wawancara, observasi, dan kajian literatur. Identifikasi dilakukan dengan analisis SWOT untuk mengidentifikasi kekuatan seperti lokasi strategis dan keragaman destinasi, serta kelemahan berupa keterbatasan fasilitas. Peluang mencakup pengembangan paket wisata dan *event* budaya, sementara ancaman meliputi degradasi lingkungan dan banjir rob. Implementasi *blue economy* dapat meningkatkan sektor ini melalui strategi promosi, pengembangan acara, dan peningkatan konservasi, yang didukung oleh manajemen fasilitas dan infrastruktur yang lebih baik.

Kata kunci: *blue economy,* pariwisata, pesisir, Semarang

INTRODUCTION

Indonesia, as the largest archipelagic country, possesses a sea area of 5.8 million km² and a coastline of 95,181 km. Such abundant natural resources should ideally support the development of coastal communities. However, in reality, a lot of coastal areas have become pockets of extreme poverty. In 2022, the extreme poverty rate in coastal areas reached 12.5% of the total 10.86 million poor people in Indonesia, much higher than the national rate (2.4%). The poverty index in coastal areas reached 9.57% (Central Bureau of Statistics 2023). Coastal communities face major challenges such as environmental degradation, climate change, and unsustainable exploitation of marine resources. The dependence of coastal communities on the fisheries sector renders them vulnerable to these problems, resulting in limited access to basic facilities, education, and health services. Therefore, it is important to find solutions that can improve the economic welfare of coastal communities while protecting the environment.

According to the report of the Semarang City Culture and Tourism Office (2024), the city has 76 tourist attractions, including 16 natural attractions, 27 cultural attractions, and 33 artificial attractions. In 2022, Semarang recorded 5,338,233 domestic tourist visits and 4,918 foreign tourist visits. By the end of 2023, the number of visits reached 6 million people, with popular destinations such as Old Town, Lawang Sewu, Marina Beach, Semarang Zoo, Sam Poo Kong, and Grand Maerokoco. The potential for marine tourism in Semarang offers great opportunities for economic growth, especially with the development of coastal tourism areas supported by improvements in infrastructure and the marine sector. Although the contribution of the tourism sector to Gross Regional Domestic Product (GRDP) has not been specifically determined, various beach destinations, such as Marina Beach and Baruna Beach, are increasingly popular and show significant growth in the number of visitors (Semarang City Tourism Office 2023).

Semarang City, on the north coast of Java, has great marine economic potential. In 2023, 1,270 households were involved in capture fisheries, with the majority (1,259 households) in the marine fisheries subsector. Marine fisheries production reached 3,057.63 tons, an increase from the previous year (2,992.66 tons), indicating significant marine potential. Despite being rich in resources, coastal communities face poverty, with 80.53 thousand poor people in 2023, an increase of 0.66 thousand from 2022 (BPS Semarang City 2024). This condition shows the need for intervention to reduce poverty and improve welfare on the coast of Semarang.

Semarang City has 1,259 marine fisheries households, which have the potential to support marine tourism in improving the welfare of coastal communities. Development efforts are pursued through diversification of fisheries-based enterprises, including ecotourism. Development of the tourism sector can maximize the potential of marine resources and provide economic benefits to local communities. However, tourism in Semarang faces environmental challenges, such as tidal flooding at Tanjung Emas Port (Asrofi *et al.* 2017), coastal erosion at Marina Beach and Maron Beach (Safitri *et al.* 2019), and waste pollution from tourists (Juwono and Subagiyo 2019), which threaten the ecosystem and infrastructure. A blue economy-based strategy is needed that considers environmental and social impacts to achieve sustainable tourism. Blue economy and tourism contribute to a sustainable economy, with tourism as the main source of the coastal economy (Citra 2017).

METHODS

This study used a qualitative descriptive method with a case study approach to analyze the implementation of the blue economy and sustainable tourism development strategies in Semarang City. The study was conducted from March to June 2024, focusing on six coastal districts: Tugu, West Semarang, North Semarang, East Semarang, Gayamsari, and Genuk, covering 62 sub-districts/villages (Figure 1).

The research variables included the potential for implementing a blue economy and sustainable tourism development strategies on the coast of Semarang City. According to Hassanali (2020), both support each other, with a holistic and integrated approach resulting in sustainable, economical, and environmentally friendly coastal development. The data used included primary and secondary data. Primary data were obtained through interviews with the Marine and Fisheries Service,

Regional Planning and Development Bureau (Bappeda), and the Semarang City Culture and Tourism Service to collect information on the fisheries sector, mangrove conservation groups, pond farmers, water quality, and marine tourism development. In addition, fishermen's perceptions of the impact of marine tourism and the implementation of the blue economy were studied through interviews with 15 fishermen who are active in the coastal areas of Semarang City. Data analysis was carried out to determine fishermen's perceptions of the strategy for developing blue economy potential through sustainable tourism in the coastal areas of Semarang City. Data collection used a questionnaire with a Likert scale, which was tested for validity and reliability to measure the views and level of participation of fishermen in the development of blue economy-based tourism (Table 1).

Secondary data was collected through literature reviews such as books, journals, and related reports. This combined data was analyzed to identify challenges and opportunities in implementing the blue economy and developing sustainable tourism (Ivey 2023).

This study used a descriptive-qualitative approach to analyze indicators of blue economy implementation, existing conditions of coastal areas in Semarang City, and related policies. Data were obtained through interviews, literature reviews, and observations, with researchers responsible for collecting and interpreting information. Validation of the results was carried out by data triangulation to ensure consistency and depth of findings (Santos *et al.* 2020). This study was exploratory in nature, aiming to build an understanding of the implementation of the blue economy in tourism development in Semarang City. The indicators used included a combination of the Ocean Health Index (OHI) (Gazioğlu 2018) and the Indonesian Marine Health Index (IKLI) (Kemenko Marves 2020). The analysis was carried out using the SWOT method to identify strengths, weaknesses, opportunities, and threats in sustainable tourism development strategies (Kişi 2019). According to Dermawan and Pasaribu (2024), the strategy of using SWOT analysis is based on the assumption of implementing an effective strategy to maximize the strengths and opportunities and minimize weaknesses and threats. The SWOT matrix was used to develop a management strategy that includes:

Strategy S-O : Leverage existing strengths to take advantage of opportunities.
Strategy S-T : Using force to reduce threats.
Strategy W-O : Minimizing weaknesses by exploiting opportunities.
Strategy W-T : Minimize weaknesses by anticipating external threats.

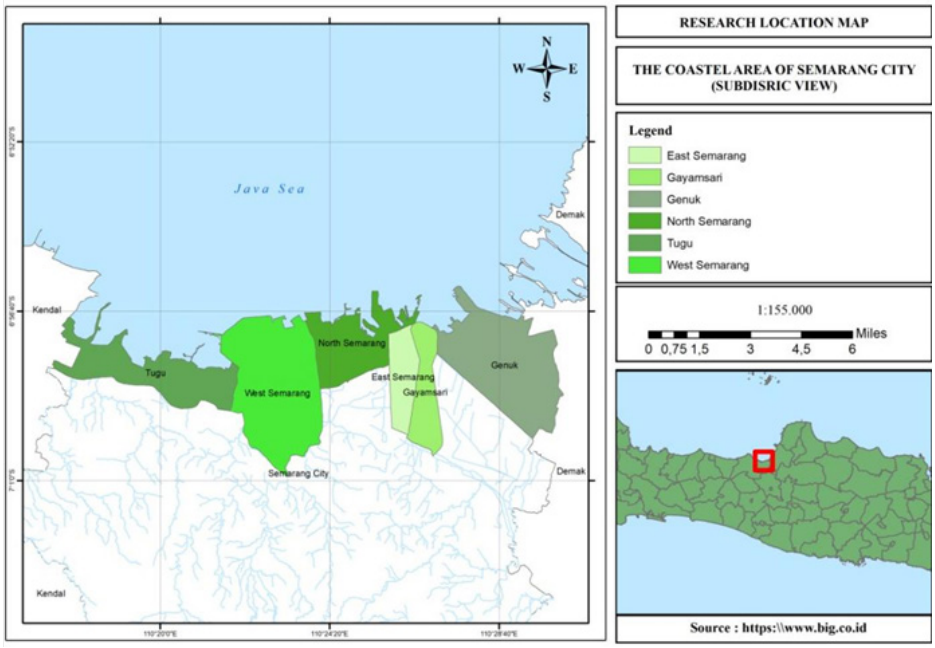

Figure 1. Map of coastal areas in Semarang City, Central Java Province.

Table 1. Likert scale analysis of fishermen's perceptions in the coastal areas of Semarang City.

Statement	Strongly Agree (SS)	Agree (S) (4)	Neutral (N) (3)	Disagree (TS) (2)	Strongly Disagree (STS) (1)
1. The development of marine tourism can improve the welfare of fishermen.					
2. The application of the blue economy in tourism can maintain the sustainability of marine resources.					
3. Fishermen need to be involved in the management of marine tourism destinations.					
4. Current tourism infrastructure and facilities are sufficient to support the development of the blue economy.					
5. Government regulations on marine tourism are clear enough and support fishermen.					
6. Waste management and coastal environments must be a priority in the development of marine tourism.					
7. Conservation-based tourism, such as mangrove ecotourism, can provide economic benefits for fishermen.					
8. Fishermen are ready to switch or participate in marine tourism activities as an alternative livelihood.					
9. The government and related parties need to be more active in supporting the involvement of fishermen in marine tourism.					

RESULTS AND DISCUSSION

Coastal areas of Semarang City

The coastal area of Semarang City possesses significant potential in the sectors of fisheries, aquaculture, agriculture, and tourism. The capture fisheries sector continues to grow, with production reaching 2,901.45 tons in 2022, including main commodities such as anchovies, mackerel, and tuna (Semarang City Fisheries Service 2022). Despite its substantial potential, the exploitation of these resources remains suboptimal. Tambak Lorok Fish Auction Place (TPI) is the main center of fisheries activities, functioning as a key transaction center for fishermen and local fisheries business actors (Figure 2).

Several locations, including around Marina Beach and Tirto Samudro Beach, the mangrove forest area in Tugu District, as shown in Figure 3, are the largest area among the coastal areas of Semarang City, with an area of 52.4 hectares (Ashari *et al.* 2024). Mangunharjo Village, located near the Java Sea along Semarang's northern coastline (24.75 km), contains 46.19 hectares of mangrove forest, making it one of the key mangrove areas in the city. According to Budi *et al.* (2023), this mangrove forest area functions as an important habitat for various marine biota and plays a crucial role in preventing coastal abrasion. This is also in line with Asari *et al.* (2021), who state that mangrove forests protect the coastline from erosion and hold back waves, as well as being a place for various marine species to live and breed. However, the growth of mangrove forests in Semarang City faces various challenges, including extreme tidal conditions and the impact of human activities such as land conversion, waste disposal, and pollution, as well as biota fishing activities, recreational activities, and transportation that can affect the survival of mangrove seedlings.

The coastal economy of Semarang City is still lagging, with 80.53 thousand poor people in 2023, most of whom come from coastal areas (BPS Semarang City 2024). The GRDP of Semarang City was recorded at 146.87 million rupiah in the same year, reflecting the challenges in

improving coastal economic welfare. Coastal area development is projected to increase, which can put pressure on the environment. Therefore, the implementation of a blue economy that supports the sustainable use of coastal resources is very important (Bax *et al.* 2022). The successful implementation of a blue economy requires clear indicators, such as the Indonesian Marine Health Index adapted from the Ocean Health Index (OHI). This index assesses marine health based on ecosystem benefits, food availability, socio-cultural values, and economic opportunities. This study analyzes the contribution of the marine sector to tourism, coastal protection, local economic support, and marine resource utilization in Semarang City. Table 2 presents a matrix for the implementation of a blue economy on the coast of Semarang City, which summarizes strategies and actions to optimize coastal economic potential sustainably.

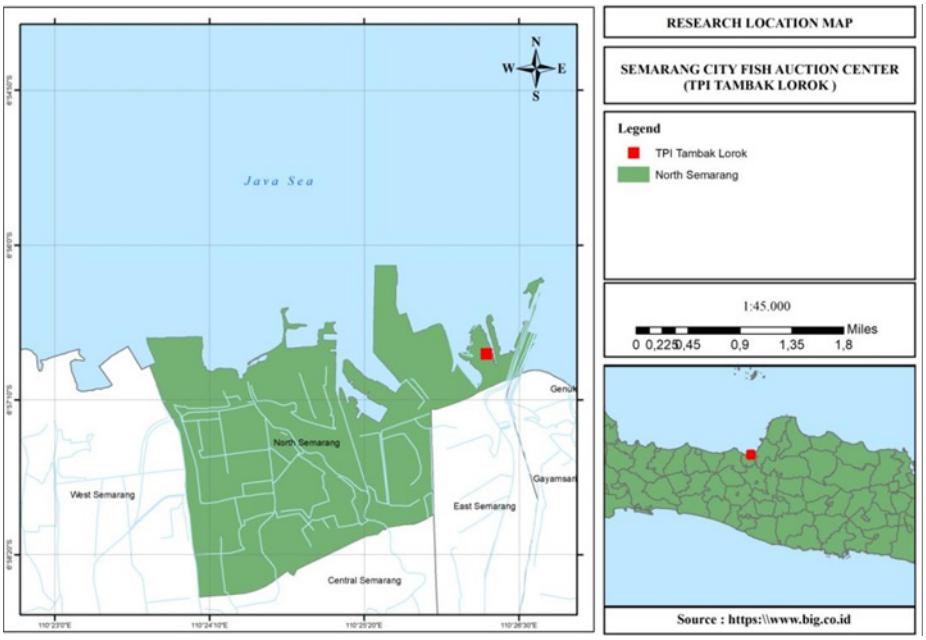

Figure 2. Fish auction place (TPI) Tambak Lorok, Semarang City.

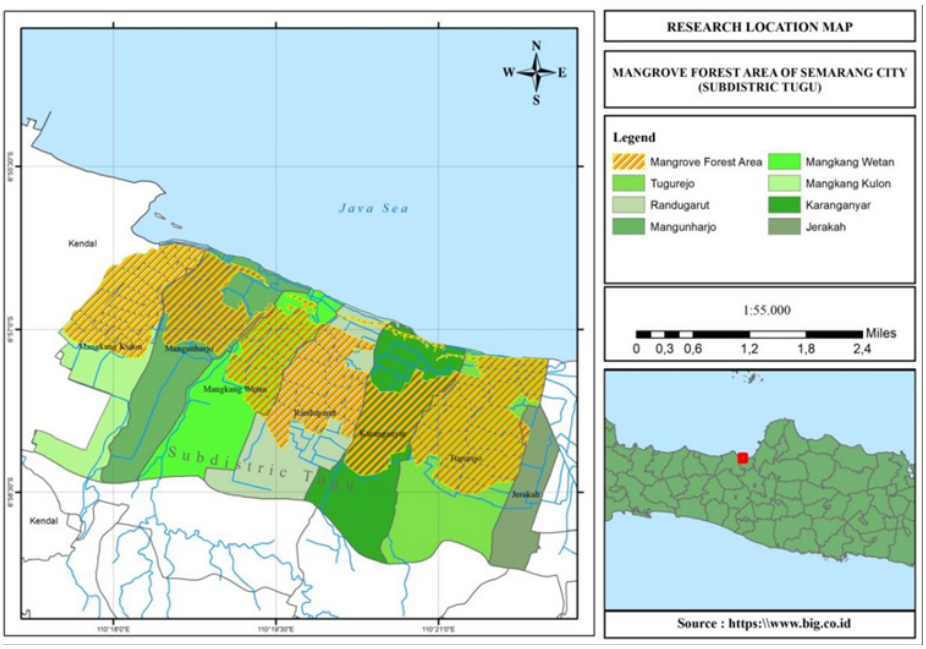

Figure 3. Mangrove forest area, Tugu District, Semarang City.

The Semarang City Government has developed the marine tourism sector by increasing the number of tourist destinations, and this effort is supported by policies such as Regional Regulation No. 6 of 2021 and the 2021-2026 Regional Medium-term Development Plan (RPJMD). The implementation of this policy focuses on four main marine tourism objects as attractions for local and foreign tourists. However, data from recent years show significant fluctuations in the number of tourist visits. Local tourists experienced a drastic decline from 7.2 million (in 2019) to 2.6 million (in 2021), while the number of foreign tourists also experienced a sharp decline. The impact of the COVID-19 pandemic was the main factor causing this decline, thus emphasizing the need for a tourism sector recovery strategy. Recovery efforts are carried out through improving facilities, more effective promotion, diversifying tourism products, and improving infrastructure so that marine tourism can develop sustainably without exceeding capacity. Fisheries production in Semarang City experienced significant fluctuations from 2017 to 2020, with a peak production occurring in 2019, before experiencing a sharp decline in 2020. Although the highest production value was recorded in 2018, the downward trend in subsequent years indicates various challenges affecting this sector. Factors such as environmental conditions, market fluctuations, and infrastructure limitations are the main causes of this change. The fisheries sector's contribution to national GDP remained relatively stable between 2.65% and 2.79%, indicating its consistent role in the national economy. Nevertheless, there is substantial potential for further growth. Better strategic planning and improvement of infrastructure and technical capacity are needed to optimize this potential (Sudarnadi *et al.* 2022). Strengthening marine resource management policies and increasing operational efficiency are expected to increase the contribution of the fisheries sector to the Semarang City economy.

Utilization of the sea for natural products, especially seaweed, has shown significant results, but its effectiveness is still suboptimal. Fluctuations in production between 2017-2019 indicate challenges in cultivation and resource management (Hasibuan 2015). The coastal area of Semarang is developing as an attractive tourist destination, with a projected increase post-pandemic. Although the government has implemented a marine tourism policy, expansion of tourism facilities and more strategic promotion are still needed. Coastal protection management and the development of a fisheries master plan must also be strengthened so that the tourism and creative economy sectors can develop sustainably.

The quality of seawater in the waters of Semarang City, especially at Baruna Beach and Marina Beach, shows adequate conditions with parameters of Temperature, DO, pH, and salinity within the normal range, supporting marine tourism activities (Table 3). The main problem is marine debris carried by currents from the sea to land, although it does not cause significant problems. The adoption of ISO 14001 certification by the port through the Green Port program reflects a commitment to a sustainable environmental management system, especially in reducing operational impacts on coastal ecosystems. In addition, the existence of a plastic waste recycling plant in Gayamsari plays a role in reducing plastic waste that has the potential to pollute the waters of Semarang City.

The results of the analysis of fishermen's perceptions of the blue economy development strategy through sustainable tourism in the coastal areas of Semarang City are shown in Table 4. Data from Table 4 obtained through a questionnaire using a Likert scale provide an overview of the level of support and responses of fishermen to various aspects of marine tourism development. The majority of fishermen responded positively to this initiative, although there are still some aspects that need further attention. The analysis reveals that most fishermen strongly agree that marine tourism has the potential to improve their economic welfare (60%) and contribute to the sustainability of marine resources (55%). In addition, the involvement of fishermen in tourism management received high support (70%), indicating that they want to actively participate in this effort. Digital marketing is also considered important (60% strongly agree) to increase the number of tourists. However, some aspects still need to be improved, such as the availability of coastal tourism infrastructure, which is considered inadequate, with 40% of fishermen choosing neutral and 20% disagreeing. In addition, government regulations related to marine tourism are not fully understood by fishermen, as seen by 35% of respondents who chose neutral and 15% who disagreed.

Table 2. Matrix of blue economy implementation on the coast of Semarang City, Central Java Province.

No.	Sector	Variable	Indicator	Existing Conditions	Existing Policy	Interpretation of Achievements
1.	The sea as a provider of tourism and recreation services	Marine tourism destinations in Semarang City	Number of destinations	4 Tourist attractions	1. Semarang City Regional Regulation No. 5, Year 2015, concerning the Semarang City Tourism Development Master Plan for 2015-2025 2. Semarang City Regional Regulation No. 6 Year 2021 concerning the Semarang City Medium-Term Development Plan (RPJMD) 2021-2026	The Semarang City Government is developing marine tourism and the creative economy by improving tourist destinations, attracting tourists, and increasing contributions. However, for sustainability, it is necessary to improve facilities and promotions, diversify tourism products, and improve infrastructure to strengthen the attractiveness and competitiveness of Semarang City tourism without exceeding the area's carrying capacity.
		Local tourists	Number of visits (people)	2018: 5,703,282 2019: 7,223,529 2020: 3,260,303 2021: 2,663,684	Semarang City Regional Regulation No. 3 of 2010 concerning Tourism	
		Foreign tourists	Number of visits (people)	2018: 66,105 2019: 82,030 2020: 6,628 2021: 77	Semarang City Regional Regulation No. 5 of 2015 concerning the Semarang City Tourism Development Master Plan for 2015-2025	
		Contribution of national tourism GDP	Percentage of national contribution	National 2018: 5,2% 2019: 4,7% 2020: 4,0% 2021: 4,2%	Presidential Regulation of the Republic of Indonesia No. 18 of 2020 concerning the National Medium-Term Development Plan 2020-2024	
		Tourism foreign exchange value	USD Billion/ Year	National 2018: US$16.43 billion 2019: US$16.91 billion 2020: US$3.31 billion 2021: US$0.54 billion	Regulation of the Minister of Tourism and Creative Economy/Head of the Tourism and Creative Economy Agency No. 11 of 2022 concerning the Ministry of Tourism and Creative Economy's Strategic Plan for 2020-2024	

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Table 2. Matrix of blue economy implementation on the coast of Semarang City, Central Java Province (Continued.).

No.	Sector	Variable	Indicator	Existing Conditions	Existing Policy	Interpretation of Achievements
2.	Coastal area protection	Coastal borders	Area	100 (one hundred) meters from the designated coastline	Semarang City Regional Regulation No. 5 of 2021 concerning the Semarang City Spatial Planning Plan for 2011-2031	Coastal protection in Semarang City shows progress with mangrove rehabilitation and coastal vegetation management. However, supervision and implementation need to be improved to be more equitable and effective and to ensure long-term sustainability.
		Mangrove rehabilitation	Area	62.9 Ha	Central Java Governor Regulation No. 24 of 2019 concerning the Policy and Strategy for Mangrove Ecosystem Management in Central Java Province	
		Coastal vegetation	Location	Green lanes are allowed to be limited to natural coastal boundaries, if the green lanes that are built will be used as boundaries for certain activities	1. Semarang Mayor Regulation Number 35 of 2023 concerning Utilization of Coastal Boundaries 2. Semarang City Regional Regulation No. 6 of 2021 concerning the Semarang City RPJMD 2021-2026	
3.	The sea as a source of livelihood and economy	Production	kg/year	2017: 2,071,980 2018: 2,803,720 2019: 2,935,414 2020: 2,652,229:	Semarang City Regional Regulation Number 5 of 2012 concerning Fisheries	Semarang City does not yet have a comprehensive strategic plan to optimize marine potential in supporting livelihoods and the economy. Existing policies are still sectoral and not sufficiently synergistic. Limited infrastructure and human resource skills in the fisheries sector. There needs to be an integrated masterplan development, investment in improving fisheries infrastructure, and training programs to improve workforce skills.
		Production value	IDR	2017: 57,406,964,000 2018: 85,077,435,000 2019: 82,512,600,000 2020: 47,350,349,628		
		Contribution of national fisheries GDP	Percentage of national contribution	Nationally 2019: 2,65% 2020: 2,79% 2021: 2,77%	Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia Number 58 of 2020 concerning Capture Fisheries Business	

Table 2. Matrix of blue economy implementation on the coast of Semarang City, Central Java Province (Continued.).

No.	Sector	Variable	Indicator	Existing Conditions	Existing Policy	Interpretation of Achievements
4.	Clean waters	Sea water quality index for marine tourism	Index	Samples of Maron Beach and Marina Beach 1. DO (DO quality is within the normal range) 2. BOD (BOD quality is within the normal range) 3. pH (pH quality is within the normal range) 4. Salinity (Salinity quality is within the normal range) 5. Waste (The majority comes from the sea to land/marine debris) 6. Odor (Does not emit odor)	1. Decree of the Minister of State for the Environment Number 51 of 2004 concerning Sea Water Quality Standards 2. Presidential Regulation (PERPRES) Number 83 of 2018 concerning Handling of Marine Debris	Coastal protection in Semarang City has been integrated into government policies, both at the provincial and city levels. Progress is seen in the expansion of mangrove forest areas in several coastal areas, such as near the port and green zones. Although the initiative
		Number of green ports	Green Port Program from Kemenko Marves	Ports that already have ISO 14001 certificates: 1 Port	Regulation of the Director General of PPKL KLHK Number: P.11/ PPKL/SET/WAS.1/8/2018 concerning Criteria for Evaluation of Port Performance in Environmental Management	
		Number of plastic waste management	Number of Waste Handling Facilities Generated on coasts, seas and inland waters	Has 1 International standard plastic waste recycling factory in the coastal area, precisely in Gayamsari District, Semarang City	Government Regulation Number 27 of 2020 concerning Specific Waste Management	

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Table 2. Matrix of blue economy implementation on the coast of Semarang City, Central Java Province (Continued.).

No.	Sector	Variable	Indicator	Existing Conditions	Existing Policy	Interpretation of Achievements
5.	The sea as a source of natural products	Seaweed production	tons	2017: 1,300.34 2018: 1,317.71 2019: 650.20	Semarang City Regional Regulation Number 5 of 2021 concerning Amendments to Regional Regulation Number 14 of 2011 concerning the Semarang City Spatial Planning Plan for 2011-2031	The utilization of the sea as a source of natural products in Semarang City has been implemented, but its effectiveness has not reached an optimal level. There needs to be an improvement in cultivation strategies, resource management, and supporting facilities to maximize the potential of this sector.

Table 3. Measurement of environmental parameters in the waters of Semarang City.

Environment Parameter	Location	
	Marina Beach	Baruna Beach
Salinity (mg/l)	25-27	20
pH	7.5-7.7	8.1-8.2
Temperature (°C)	30.2	31.0
DO (mg/l)	5.53	5.37

Table 4. Analysis of fishermen's perceptions of the development of the blue economy in the coastal areas of Semarang City.

Pernyataan	Strongly Agree (SA) (5) (%)	Agree (A) (4) (%)	Neutral (N) (3) (%)	Disagree (D) (2) (%)	Strongly Disagree (SD) (1) (%)
1. The development of marine tourism can improve the welfare of fishermen.	60	40	0	0	0
2. The application of the blue economy in tourism can maintain the sustainability of marine resources.	55	35	10	0	0
3. Fishermen need to be involved in the management of marine tourism destinations.	70	25	5	0	0
4. Current tourism infrastructure and facilities are sufficient to support the development of the blue economy.	10	25	40	20	5
5. Government regulations on marine tourism are clear enough and support fishermen.	65	30	5	0	0
6. Waste management and coastal environments must be a priority in the development of marine tourism.	15	30	35	15	5
7. Conservation-based tourism, such as mangrove ecotourism, can provide economic benefits for fishermen.	75	20	5	0	0
8. Fishermen are ready to switch or participate in marine tourism activities as an alternative livelihood.	60	35	5	0	0
9. The government and related parties need to be more active in supporting the involvement of fishermen in marine tourism.	70	25	5	0	0

These findings indicate that although fishermen generally support the development of the blue economy, challenges in infrastructure and understanding regulations are still obstacles. Therefore, it is necessary to improve supporting infrastructure, including transportation access and tourism amenities that facilitate marine-based activities. According to Tranter *et al.* (2022), the socialization of policies and regulations is a strong thing, so that fishermen can better understand their roles and rights in managing marine tourism. With these improvements, the implementation of the blue economy in Semarang City can be more effective and yield long-term benefits for coastal communities.

Coastal area development strategy of Semarang City

The implementation of the blue economy in the marine tourism sector can be optimized by using SO, WO, ST, and WT strategies. To achieve these strategies, 19 steps can be taken as follows (Table 5).

Strategy SO (Strengths-Opportunities)

1. Utilization of strategic locations for integrated tour package promotions: Optimizing Semarang City as a center for tourism promotion includes various marine destinations and local activities. The "Wis Semar" application is used to facilitate booking and provide destination information, such as Marina Beach and Mangkang Mangrove Ecotourism, thereby increasing the attractiveness and accessibility for tourists.
2. Development of cultural events based on the richness of local traditions: Collaboration with local communities in cultural festivals aims to enrich the tourist experience, increase the attractiveness of marine tourism, and introduce the unique culture of Semarang City.

3. Increasing conservation programs through support from affordable ticket prices: Determining affordable ticket prices supports coastal conservation, with part of the revenue allocated for preservation, so that tourists contribute.
4. The "Wis Semar" application to introduce the diversity of marine tourism destinations in Semarang City: Development of visual content and interactive features in the application increases visibility, attracts tourists, and provides complete information about the marine destinations of Semarang City.

Strategy WO (Weakness-Opportunities)

1. Improving supporting facilities through the development of new destinations: Building new tourist destinations with supporting infrastructure, such as information centers, tourist services, and sanitation facilities, to overcome the limited facilities at tourist locations.
2. Optimizing promotion and marketing with technology: Utilizing the "Wis Semar" application and digital features for promotion, increasing visibility, and providing complete information about facilities and activities to attract more visitors.
3. Diversifying tourism offerings to reduce seasonal dependence: Designing annual tourism packages, including seasonal cultural events and special programs, to take advantage of the natural and cultural beauty of Semarang City and maintain the stability of visits.
4. Improving management through collaboration with local communities: Involving local communities in the management of cultural destinations and events to increase efficiency, consider community needs, and strengthen support for tourism development.

Strategy ST (Strengths-Threats)

1. Sustainable infrastructure development to reduce the risk of environmental degradation: Leveraging strategic locations and marine destinations by building environmentally friendly infrastructure, such as efficient waste management and green buildings, to reduce environmental impacts.
2. Increasing the diversity of tourism activities to overcome competition: Using local culture, traditions, and affordable tickets to create unique tourism experiences through tour packages that combine elements of culture, tradition, and nature to attract visitors.
3. Utilizing beautiful landscapes for environmental education and awareness programs: Leveraging the beauty of the landscape for environmental education and awareness programs by providing information and activities that encourage conservation and sustainable tourism practices.

Strategy WT (Weakness-Threat)

1. Increasing the capacity of facilities and infrastructure with a focus on environmental protection: Addressing the limitations of tourism facilities by building or renovating environmentally friendly infrastructure, such as public toilets, trash bins, and parking areas, and implementing an effective waste management system.
2. Integrated promotional strategies to face destination competition: Addressing the lack of promotion with data-based marketing strategies through collaboration with travel agents and online platforms to increase the visibility and attractiveness of Semarang City.

Key challenges in implementing this strategy include competition with destinations that have already adopted digital approaches, the limited readiness of tourism stakeholders to utilize marketing technologies, and the need for consistent updates of information that is relevant and engaging to tourists. The implementation of these two strategies also faces obstacles in terms of regulation, human resource readiness, and technology adaptation by small and medium business actors in the tourism sector. The active involvement of the government, investors, and local communities is essential to ensure the program's sustainability and minimize implementation risks.

Table 5. Strategy for optimizing the implementation of the blue economy in the marine tourism sector.

Internal Analysis / External Analysis	Strengths	Weakness
	1. Strategic location because it is located in the capital city of Central Java Province. 2. Diversity of marine tourism destinations. 3. Wealth of local culture and traditions. 4. Affordable entrance ticket fees. 5. Has a charming landscape.	1. Limited tourism support facilities. 2. Lack of destination promotion and marketing. 3. Dependence on certain seasons for tourists. 4. Suboptimal management. 5. Uneven tourism amenities.
Oppurtunities	**Strategy S-O**	**Strategy W-O**
1. Development of new tourism destinations. 2. Collaboration with local communities for cultural events. 3. Environmental conservation and rehabilitation programs. 4. Offering integrated tourism packages with marine activities. 5. Utilizing technology to facilitate tourism services through the "Wis Semar" (Semarang Tourism) application.	1. Utilization of strategic locations for integrated tourism package promotion. 2. Development of cultural events based on local traditions. 3. Enhancement of conservation programs through support from affordable ticket prices. 4. Promotion of diversity of marine tourism destinations with information technology. 5. Optimization of captivating landscapes for the development of new destinations.	1. Improving supporting facilities through new destination development. 2. Optimizing promotion and marketing with technology. 3. Diversifying tourism. Offerings to reduce seasonal dependence. 4. Improving management through collaboration with local communities. 5. Distributing tourism amenities with environmental conservation and rehabilitation programs.
Threats	**Strategy S-T**	**Strategy W-T**
1. Environmental degradation due to tourism activities. 2. Competition from other tourist destinations in the surrounding area. 3. Limited road access. 4. Exceeding the capacity for each destination. 5. Risk of tidal flooding.	1. Sustainable infrastructure development to reduce the risk of environmental degradation. 2. Increasing the diversity of tourism activities to overcome competition. 3. Optimizing accessibility with improved infrastructure. 4. Visitor capacity management based on capacity and risk of rob flooding. 5. Utilizing captivating landscapes for environmental education and awareness programs.	1. Capacity improvement of facilities and infrastructure with a focus on environmental protection. 2. Integrated promotion strategy to face destination competition. 3. Management and infrastructure improvement to address capacity and flood risk issues. 4. Equal development and improvement of road access to reduce the impact of limited amenities.

CONCLUSION

Semarang City holds significant potential for blue economy-based tourism development, supported by a strategic location and accessibility to marine tourism destinations such as Marina Beach, Maron Beach, and Mangkang Mangrove Ecotourism. To realize a blue economy in marine tourism in Semarang City, strategies that can be implemented include promoting integrated tourism packages, developing local cultural events, and conservation programs with affordable tickets. The use of technology, diversification of tourism products, and the development of new destinations can enhance the appeal and competitiveness of Semarang's marine tourism. Furthermore, enhancing tourism facilities, fostering collaboration with local communities, and upgrading infrastructure are crucial to support sustainable tourism development.

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