

Strategic Management in the Maritime Sector in Mitigating Climate Change in Indonesia

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Abstract. Indonesia's maritime sector has great potential to support the country's economic growth. However, this sector still faces challenges such as inadequate infrastructure, suboptimal regulations, lack of technological innovation, and maritime security issues. One of the significant challenges is climate change, which is increasingly worrying. Therefore, mitigating climate change is an important thing to do in the maritime sector in Indonesia. This research aims to analyze strategic management in the maritime industry in mitigating climate change in Indonesia. The research method used is qualitative post-positivism with a qualitative approach to collect data through observation and documentation related to strategic management in the maritime sector in mitigating climate change in Indonesia. The results and discussion show that strategic management is essential in overcoming climate change in the maritime industry in Indonesia. Environmental scanning, strategy formulation, strategy implementation, and evaluation and control must be carried out continuously so that the strategies used remain relevant and effective in dealing with climate change. With good strategic management in the maritime sector, it is hoped that this sector can experience sustainable economic growth and face the impacts of climate change more effectively.

1 Introduction

Maritime is everything related to or occurring at sea, such as fishing, shipping, shipping, oil drilling, and coastal tourism. This term can also refer to countries or regions that have access to the sea and use maritime resources as a source of life or income. In an economic context, the maritime sector is often used to describe shipping, trade, and shipbuilding industries. The maritime sector in Indonesia is a strategic financial sector with great potential to support the country's economic growth [1]. Indonesia has vast maritime potential, with waters covering 6.4 million square km and a coastline of 95,181 km. This potential opens up great opportunities for the sectors of law enforcement, trade, tourism, fishing, and maritime product processing [2]. Indonesia also has abundant maritime biodiversity and natural resources, including fish, oil, gas, and minerals. The maritime sector is also integrated with other economic sectors such as logistics, shipping, and ports [3], [4].

However, despite great potential, the Indonesian maritime sector still faces challenges, such as inadequate infrastructure, suboptimal regulations, lack of technological innovation,

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and maritime security issues. Therefore, the government continues to make various efforts to increase the development of the maritime sector to provide maximum economic benefits for the country. Climate change mitigation aims to reduce greenhouse gas emissions and minimize human contributions to climate change [5], [6]. Comfort includes various actions such as increasing energy efficiency, developing renewable energy sources, reducing waste and waste, and improving forest and land management [7]. Climate change mitigation aims to minimize the impact of climate change on the environment, economy, and human welfare [8], [9].

Strategic Management is the process of planning, coordinating, and implementing decisions and actions to achieve an organization's or company's long-term goals[10]. Strategic management involves analyzing a company's internal and external situation, identifying strengths and weaknesses, opportunities and challenges, determining strategic direction and priorities, and developing action plans and resource allocation to achieve those goals [11]. Strategic management is essential for the success of an organization or company in achieving its goals. This allows companies to create competitive advantages through innovation, better products and services, and improved efficient business processes. Strategic management will also enable companies to anticipate market changes and develop business environments while strengthening their position as leaders in the industries they have entered.

The aim of strategic management analysis in the maritime sector in mitigating climate change in Indonesia is to help the government, the fishing industry, and all stakeholders to increase the effectiveness and efficiency of climate change mitigation activities in the maritime sector. This analysis also aims to provide a holistic view of the challenges, opportunities, and linkages in improving the maritime sector's performance in dealing with climate change's impacts. In addition, strategic management analysis can help identify the most effective strategies and tactics to strengthen the maritime sector's resilience in climate change and increase its adaptive capacity to possible future impacts. Furthermore, this analysis aims to encourage cooperation between various stakeholder groups in the maritime sector and between the maritime industry and other sectors in efforts to mitigate climate change nationally and globally.

2 Research Methods

Qualitative post-positivist research methods are used to analyze and understand the phenomenon's complexity[12], [13]. This research will use a qualitative approach to collect data through observation and documentation related to strategic management in the maritime sector in mitigating climate change in Indonesia. The data obtained will be processed and analyzed using qualitative data analysis techniques such as content analysis, narrative analysis, and thematic analysis [14], [15].

The post-positivism method in this research will be used to understand how strong or weak the relationship between the maritime sector's strategic management and climate change mitigation carried out by the Indonesian government. This research will also strengthen our understanding of how strategic management provides a positive impact in mitigating climate change, as well as possible alternatives to increase the effectiveness of strategic management. In this research, the main focus will be given to the maritime sector as part of climate change mitigation in Indonesia. Moreover, this research will also expand our understanding of effective climate change mitigation strategies and contribute to improving the welfare of water and maritime communities in Indonesia.

Overall, this qualitative post-positivism research method will provide in-depth information about strategic management in the maritime sector in mitigating climate change in Indonesia. The results of this research will give solid recommendations for developing

more effective strategies for overcoming climate change and improving the welfare of aquatic and maritime communities in Indonesia.

3 Results and Discussion

According to Wheelen and Hunger (2012), strategic management is setting organizational goals and designing coordinated and integrated action plans to achieve these goals [16]. According to their theory, strategic management consists of several stages as follows:

3.1 Environmental Scanning

Environmental scanning is a technique used to collect, analyze, and interpret relevant environmental information to assist strategic management in making informed decisions. In the maritime sector, ecological scanning is essential to address increasingly alarming climate change. Climate change in Indonesia directly affects the maritime industry, which is critical for economic growth. Increasing sea temperatures, rising sea levels, and damage to coral reefs can threaten the sustainability of the maritime economy and environment. Therefore, effective strategic management is needed to overcome climate change in the maritime sector.

Environmental scanning can help strategic management make decisions in climate change [17]. In the context of the maritime sector, ecological scanning can help identify factors that influence business sustainability in the maritime sector [18]. For example, climate change will affect fisheries productivity, the spread of mangroves, and the sustainability of tourism. Along with this, environmental scanning can also help track and monitor climate change's impact on the maritime sector. Information gathered through environmental scanning can be used to identify areas vulnerable to climate change impacts and develop effective mitigation strategies.

In the context of the maritime sector, several mitigation strategies that can be implemented are promoting environmentally friendly technologies, such as energy-efficient fish preservation technology and the use of renewable energy in ports. Apart from that, other mitigation strategies are developing coral reef rehabilitation programs and using ecotourism to increase the sustainability of the tourism sector. Overall, environmental scanning can help strategic management to deal with climate change, which may affect the maritime sector in Indonesia. Effective environmental scanning allows strategic management to identify critical factors and develop appropriate and sustainable mitigation strategies.

3.2 Strategy Formulation

In the modern era, climate change is a global problem that is increasingly becoming a concern for many countries. Indonesia, which mainly consists of territorial waters and has abundant maritime resources, must, of course, be able to formulate strategies to deal with and reduce the impact of climate change [19]. Therefore, formulating a strategy for the maritime sector is an important thing to do [20]. One strategy that can be implemented is good strategic management in the maritime sector. In this case, the Indonesian government must consider several things, such as preserving the sea and its ecosystem. Apart from that, efforts can be made to create strict regulations on using maritime resources such as excessive fishing and dumping plastic waste into the sea. This is done to maintain a sustainable maritime environment and prevent negative impacts that may arise on fishermen and maritime communities who depend on the sea.

The government can also formulate strategies for developing human resources (HR) in the maritime sector. This is done by providing opportunities for the maritime community to

access education and training to increase their competence in the maritime field. Education and training must also be adapted to current technological developments so that the human resources produced can be competitive and compete with other countries. The government can also formulate strategies for developing economic resources in the maritime sector. This can be done by increasing the added value of the commodities produced, such as developing maritime and fisheries products that have more added value and are highly competitive. In this case, it is also necessary to pay attention not to sacrificing the environment to maintain maritime sustainability.

In formulating strategies for the maritime sector, there must be synergy between the government, the private sector, and the maritime community. Apart from that, there needs to be good coordination and communication between related parties so that the goals to be achieved can be achieved well and sustainably. By formulating a good strategy, it is hoped that the Indonesian maritime sector can experience sustainable growth and face the impacts of climate change more effectively.

3.3 Strategy Implementation

The Indonesian maritime sector is essential in mitigating climate change because it is directly involved in managing and utilizing maritime resources [21]. Implementing strategies for strategic management in the maritime sector can solve climate change [22]. Several strategies that can be implemented in strategic management in the maritime sector in Indonesia include:

- Sustainable use of maritime resources. Sustainable use of maritime resources can be carried out through excellent and sustainable management, such as the development of the fishing industry and sustainable fishing, the management of coastal and maritime areas by maintaining the balance of the maritime ecosystem, and the application of environmentally friendly technology in the use of fishing vessels and equipment.
- It is reducing greenhouse gas emissions. Reducing greenhouse gas emissions can be done by reducing the use of fossil fuels on ships and replacing them with alternative fuels such as biofuel. It can also be done by limiting the number of ships operating that pursue economic profits above environmental balance.
- They have improved education and technology support. Increased education and technological support can be provided to fishing communities as the main actors in the maritime sector. They provide education regarding sustainable maritime resource management, environmentally friendly fishing, and the use of technology to increase efficiency and effectiveness in maritime resource management.
- Improvement of maritime infrastructure. Improving maritime infrastructure supported by modern technology is a solution for optimizing maritime management. Port management and goods delivery routes can be improved to be more effective and efficient.

In implementing strategies for strategic management in the maritime sector in mitigating climate change in Indonesia, the role of all related parties is needed, including government, society, business actors, and NGOs. The importance of synergy in implementing sustainable programs to overcome climate change in Indonesia will positively impact the maritime sector's sustainability, which has great potential in the economy and natural resources. Apart from that, the role of technology is also essential in supporting the successful implementation of strategies for strategic management in the maritime sector in mitigating climate change in Indonesia. Environmentally friendly or green technology can be adopted in producing and processing fishery products and environmentally friendly sea transportation. This will help reduce the negative impacts of climate change on the maritime sector.

The government can also incentivize business actors to adopt environmentally friendly technology and sustainable waste and waste management programs. Apart from that, educational campaigns for the public must also be carried out so that there is awareness of

the importance of preserving the environment in the maritime sector. In conclusion, implementing strategies for strategic management in the maritime sector in mitigating climate change in Indonesia requires synergy from all related parties, environmentally friendly technology, government incentives, and community educational campaigns. In this way, the maritime sector can contribute to maintaining environmental sustainability while strengthening the national economy.

3.4 Evaluation and Control

Evaluation and control are essential to strategic management in climate change mitigation. The maritime sector is one of the sectors greatly affected by climate change, so good evaluation and control are needed to minimize its impact. Evaluation is measuring and assessing performance in achieving predetermined goals [23]. Evaluations can be carried out periodically to ensure that the strategic plans that have been made can run well [24]. In the context of the maritime sector, evaluations can be carried out by examining various aspects such as seawater quality, the health of maritime biota, the security and safety of shipping activities, and compliance with statutory regulations.

Control is the process of managing activities carried out so that they are following the established strategic plan. Control can be carried out by monitoring each activity and taking corrective action if deviations are found. In the maritime sector, control can be carried out by supervising shipping activities, ensuring compliance with fishing regulations, and ensuring that shipping takes place safely and does not cause adverse environmental impacts. In dealing with climate change, evaluation and control must be carried out continuously to ensure that the strategies used remain relevant and practical.

Several actions that can be taken in evaluating and controlling strategic management in the maritime sector include: Memonitor kualitas air laut dan keberadaan biota laut untuk mengidentifikasi efek perubahan iklim.

- Collect accurate data about shipping and fishing activities to facilitate control.
- Ensure that all parties involved comply with rules and regulations related to the maritime sector.
- Adopt the latest technology and practices to reduce environmental impacts and increase efficiency in the maritime sector.
- Improve coordination between related parties, such as the maritime sector's government, ship owners, and business actors.

In facing the challenges of climate change, evaluation and control must be carried out continuously to ensure that the strategies used remain practical and relevant. In the maritime sector, evaluation and control can be carried out by monitoring seawater quality and maritime biota populations, collecting accurate data on shipping and fishing activities, ensuring compliance with relevant regulations, adopting the latest technology and practices, and improving coordination between related parties. Apart from that, evaluation and control in the maritime sector can also be carried out by strengthening port supervision and control systems, strengthening shipping security and environmental protection, and monitoring effective maritime resource management policies. Reasonable control and evaluation will help strengthen maritime sector development and maintain a healthy environment for the entire community.

4 Conclusion

Climate change is a global challenge that cannot be ignored, especially for Indonesia, which has a maritime sector that is very important for economic growth and social welfare.

Therefore, strategic management is critical in overcoming climate change in the maritime sector. Environmental scanning is a strategy for collecting, analyzing, and interpreting relevant environmental information so that strategic management can make informed decisions. Meanwhile, formulating an appropriate strategy must consider environmental sustainability, human resource development, and economic resource development.

Apart from strategy formulation, strategy implementation is also an essential factor in dealing with climate change in the maritime sector. Sustainable management of maritime resources, reducing greenhouse gas emissions, increasing education and technological support, as well as improving maritime infrastructure are strategies that can be implemented. However, evaluation and control must also be carried out periodically to keep the strategies used relevant and practical. Monitoring seawater quality and the presence of maritime biota, collecting accurate data on shipping and fishing activities, ensuring compliance with relevant regulations, adopting the latest technology and practices, and improving coordination between related parties are evaluation and control strategies that can be carried out in the maritime sector.

In conclusion, strategic management is critical in mitigating climate change in the maritime sector in Indonesia. In this strategic management, there must be environmental scanning, strategy formulation, strategy implementation, and evaluation and control. Some strategies that can be implemented are sustainable management of maritime resources, reducing greenhouse gas emissions, increasing education and technological support, and improving maritime infrastructure. However, evaluation and control must also be carried out continuously so that the strategies used remain relevant and effective in dealing with climate change in the maritime sector in Indonesia.

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