



Social Construction Of Environmentally Friendly Shipping In Coastal Communities In Banda Aceh

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Abstract. This research examines the social construction of environmentally friendly shipping in the coastal communities of Banda Aceh City. In the context of climate change and coastal environmental degradation, efforts to adopt more sustainable shipping practices are becoming increasingly relevant. This research aims to understand how coastal communities shape their understanding and attitudes towards eco-friendly shipping and the factors that influence the adoption of such practices. The research method used a qualitative approach with in-depth interview techniques and participatory observation. The results showed that the social construction of eco-friendly shipping is influenced by local knowledge, cultural values, and historical experiences of coastal communities. Factors such as limited access to environmentally friendly technology and a lack of socialization on the benefits of sustainable shipping play an important role in shaping people's views. The findings are expected to provide insights for policymakers and practitioners in designing more effective interventions to promote eco-friendly shipping in coastal areas. This research also contributes to a deeper understanding of how social aspects influence the implementation of environmental practices in coastal communities.

Keywords: Social Construction, Environmentally, Coastal Communities.

1 First Section

Over the past few decades, global attention to environmental sustainability has increased, especially in the context of maritime activities. As an important sector in economic development and livelihoods, shipping and shipping activities pose major environmental challenges. Coastal communities in Banda Aceh, like many other communities around the world, face dual pressures between the need for economic development and environmental conservation. This research aims to explore the social construction of environmentally friendly shipping practices among these communities by understanding how cultural, social, and economic factors shape their approach to maritime sustainability.

The coastal region of Banda Aceh has a close relationship between its people and the sea. For generations, the sea has been a source of livelihood, culture, and identity

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R. Mahmud et al. (eds.), *Proceedings of the 3rd International Conference and Maritime Development (ICMaD 2024)*, Advances in Engineering Research 255,

https://doi.org/10.2991/978-94-6463-628-4_16

(Humairah: 2023). However, this symbiotic relationship is challenged by increasing environmental degradation caused by unsustainable shipping practices, such as overfishing, pollution, and habitat destruction. Despite these challenges, there is significant movement among these communities towards more sustainable and environmentally friendly shipping practices.

This research is based on the theory of social constructionism, which states that knowledge and meaning are created through social processes and interactions (Chuang, 2021). In the context of eco-friendly shipping practices, this theory suggests that what is considered 'sustainable' or 'unsustainable' is not just a matter of scientific fact but also shaped by social norms, cultural beliefs, economic conditions, and political influences. This framework allows for an exploration of how different stakeholders within coastal communities—such as fishers, local leaders, and environmental organizations—construct their understanding of what constitutes eco-friendly shipping.

Existing literature on maritime environmental sustainability often focuses on technological solutions or policy frameworks to reduce environmental impacts. However, there are gaps in understanding the social and cultural dimensions of sustainability, especially in non-Western contexts. Previous studies in areas similar to Banda Aceh suggest that community-based approaches, which integrate traditional knowledge and practices with modern sustainability concepts, can be more effective than top-down regulatory approaches. These studies emphasize the importance of understanding local social constructions of environmental practices to develop context-appropriate interventions.

Based on the background description above, the author is interested in conducting in-depth research entitled Social Construction of Environmentally Friendly Shipping in Coastal Communities in Banda Aceh.

2 Research Methodology

This research adopts a qualitative approach, utilizing a descriptive-analytical model. Data will be gathered through a review of literature and various information sources, focusing on critical analyses related to educational concepts—both formal and non-formal—as well as social campaigns aimed at raising awareness of environmentally friendly shipping practices.

3 Results And Discussion

Eco-friendly shipping is an important topic in the effort to preserve the environment, especially in coastal areas such as Banda Aceh. Coastal communities often interact directly with the sea as a source of livelihood, so eco-friendly shipping is crucial to maintaining the balance of the ecosystem (Okafor-Yarwood, 2020).

Eco-friendly shipping is a concept that has received increasing attention in recent decades. It promotes shipping practices that minimize negative impacts on the marine and coastal environment. Eco-friendly shipping (Prokopenko: 2020) is particularly important for coastal areas such as Banda Aceh, where people's lives are heavily

dependent on the sea for livelihoods. With increased shipping activities, both for transport and tourism purposes, it is important to ensure that such activities do not damage the delicate balance of the ecosystem.

Marine ecosystems are among the most complex and diverse ecosystems in the world (Sunagawa et al., 2020). The ocean provides habitat for millions of species, from microscopic plankton to large whales. It also plays an important role in regulating the global climate, absorbing carbon dioxide from the atmosphere, and storing heat (Gahlawat, I. N., & Lakra, P. 2020). However, human activities, including shipping, can cause significant damage to these ecosystems.

In Banda Aceh, coastal communities have a close relationship with the sea. They depend on the sea for many needs, from fishing to tourism. However, unfriendly shipping can lead to water pollution, coral reef damage, and disruption of marine life, which in turn threatens the livelihoods of local communities.

3.1 Eco-friendly Shipping Concept

Green shipping is an increasingly important concept in efforts to preserve marine and coastal environments. It refers to a range of practices designed to minimize negative impacts on marine ecosystems and coastal environments, including the use of cleaner fuels, responsible waste management, and the protection of sensitive marine habitats (Walker et al., 2020). Green shipping focuses on implementing technologies and operational methods that reduce greenhouse gas emissions, water pollution, and other negative impacts of shipping activities (Andrews, N et al., 2021).

One of the essential aspects of green shipping is the use of environmentally friendly fuels, such as LNG (liquefied natural gas) and biofuels, which can significantly lower sulfur and nitrogen oxide emissions, reducing their harmful impact on the environment. Additionally, effective waste management on ships plays a crucial role in minimizing marine pollution. Equipping ships with efficient sewage treatment systems helps reduce the discharge of both solid and liquid waste into the ocean, thereby preventing chemical contamination that could harm marine ecosystems (Rajmohan et al., 2019).

In addition, eco-friendly shipping also includes efforts to protect marine habitats from physical damage (Zhou, Y., Li, X., & Yuen, K. F.: 2023). Shipping activities can cause direct damage to coral reefs, seagrass beds, and other sensitive ecosystems if not properly regulated. Therefore, measures such as the establishment of shipping lanes that avoid sensitive areas and the implementation of lower vessel speeds near critical habitats are essential (Pirota, V: 2019). All these aims to maintain the balance of marine ecosystems, ensure the sustainability of marine resources, and minimize negative impacts on marine biodiversity.

Eco-friendly shipping refers to practices that minimize negative impacts on marine and coastal environments. These practices include the use of environmentally friendly fuels, proper waste management, and protection of marine habitats. The main goal of eco-friendly shipping is to protect marine ecosystems from pollution and damage caused by human activities (Prokopenko: 2020), especially from the fishing and tourism industries.

3.2 Social Construction among Coastal Communities

Social construction is a collective understanding shaped by shared social experiences within a community (Ingram, 2019). In Banda Aceh, the social construction of eco-friendly shipping is shaped by the history, culture, and values held by coastal communities. These values include concern for environmental sustainability, dependence on marine resources, and adaptation to changes in their environment.

Coastal communities in Banda Aceh have a rich heritage of shipping and fishing that spans generations (Masjhoer, 2019). This tradition fosters local expertise and understanding of sustainable sea use, shaping a community ethos centered on maintaining a productive and clean marine environment. Cultural customs and beliefs reinforce this perspective, emphasizing harmony with nature as a core value (Agus, C., et al., 2021). These traditions instill a deep awareness among the people that their well-being is intrinsically linked to the health of the ocean, highlighting the importance of sustainable practices to preserve the marine ecosystem.

In many coastal communities in Banda Aceh, the sea is regarded as the mother who gives life (Rudina: 2019). Therefore, to damage the ocean is to disrespect the source of life. These values are deeply rooted and passed on through generations, both through informal education in the family and through traditional ceremonies. This view is also reinforced by Islam, the faith of the majority of people in Banda Aceh, which teaches the importance of protecting the environment as a form of trust in God.

In addition to local values and culture, the social construction of eco-friendly shipping in Banda Aceh is also influenced by interactions with external parties, such as non-governmental organizations (NGOs), the government, and the international community. Programs initiated by the government and NGOs, such as socialization on the importance of protecting the marine environment and training on environmentally friendly shipping practices, have helped raise public awareness on the issue. On the other hand, pressures from international regulations and global trade have also influenced how people view the marine environment.

While there is a growing awareness of the importance of eco-friendly shipping, there are several challenges faced by coastal communities in Banda Aceh in implementing these practices.

Limited access to environmentally friendly technology is one of the main obstacles. Many traditional fishing boats in Banda Aceh still use inefficient equipment and environmentally damaging fossil fuels. In addition, understanding of modern technology and access to it is still limited among local fishermen.

Coastal communities are highly dependent on the ocean as their main source of livelihood (Thanh et al., 2021). Therefore, although they realize the importance of protecting the environment, economic necessity often forces them to ignore environmentally friendly practices. For example, the use of explosives or poisons to catch fish is still found because these methods are considered more efficient and quick, although they are very damaging to the environment.

3.3 Case Study: Implementation in a Coastal Village in Banda Aceh

To better understand the social construction and implementation of eco-friendly shipping, this research conducted case studies in several coastal villages in Banda Aceh. The observation results show that:

Local Community Involvement: In Lamjamee Village, local communities are actively involved in environmental conservation programs initiated by the local government and NGOs. The community collectively decided to limit the types of fishing gear used and conduct joint patrols to prevent activities that damage the environment.

Participatory Approach: In Ulee Lheue Village, the participatory approach to environmental policy-making has proven effective. The community is involved in every stage of policy-making, from planning to implementation. This strengthens their sense of ownership and responsibility for the resulting policy.

Behavior Change: In Lhoknga Village, there was a significant change in behavior after the training and socialization. The fishermen who previously used explosives to catch fish are now using more environmentally friendly fishing methods.

The research findings revealed that most respondents demonstrated a relatively high awareness of the importance of marine conservation. However, their grasp of the concept of "ecofriendly shipping" differed significantly based on their social, economic, and educational backgrounds. This variability suggests that while there is a general recognition of the need to protect marine ecosystems, the depth and specifics of understanding around sustainable shipping practices are influenced by factors such as access to education, economic status, and social influences. This highlights the need for targeted educational efforts that cater to different community segments to foster a more comprehensive and consistent understanding of eco-friendly practices within the shipping industry.

3.4 Economic Factors and Sustainability of Shipping

Economic factors play a significant role in the social construction of eco-friendly shipping. The research results show that:

Most fishing families in Banda Aceh are highly dependent on the sea as their main source of livelihood. Therefore, decisions regarding shipping practices are often based on short-term economic considerations rather than long-term sustainability (Davis et al., 2020). This finding is supported by analyses by Pauly (2016), which suggest that economic pressures can push coastal communities to abandon conservation practices in favor of immediate gains.

Fish prices and access to broader markets strongly influence fishers' decisions about when and how they fish (Sogn-Grundvåg: 2021). Some fishermen feel forced to use more intensive and less sustainable fishing methods to meet market demand and achieve sufficient economic returns. This is consistent with research by Allison and Ellis (2001), who found that market dynamics can negatively impact the sustainability of fisheries in coastal areas.

3.5 Social Dynamics and the Role of Local Leadership

Local leadership and social structures also have a significant impact on the social construction of eco-sailing:

Traditional and religious leaders, including village heads and imams, play a crucial role in shaping attitudes and behaviors regarding environmental conservation. The study found that leaders who actively advocate for environmental protection are particularly effective in guiding communities toward sustainable shipping practices. This aligns with Ostrom's (1990) research, which underscores the importance of local leadership in the sustainable management of common resources. By promoting environmentally responsible behaviors and fostering a collective sense of stewardship, these leaders help communities adopt practices that benefit both the local ecosystem and the broader marine environment.

Social networks play an important role in disseminating information and shaping social norms related to shipping practices. Strong fisher groups tend to be better able to adopt sustainable practices due to collective support and knowledge sharing. This is consistent with findings by Pretty and Ward (2001), which suggest that social capital can strengthen natural resource management through collective action.

4 Conclusions

The study concludes that the social construction of eco-friendly shipping in Banda Aceh's coastal communities is influenced by various factors, including traditional ecological understanding, economic considerations, the role of community leaders, and social dynamics. Economic challenges and limited access to technology and education are key barriers to adopting sustainable practices. However, with the right support from local leaders and inclusive policies, there is great potential to integrate eco-friendly shipping practices into the daily lives of Banda Aceh's coastal communities. These findings highlight the need for a holistic, community-based approach to ensure the long-term sustainability of marine resources and the well-being of coastal communities.

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