SEA LOVE MONTH: INNOVATION IN HANDLING PLASTIC WASTE IN THE SEA THROUGH THE FISHERMAN PARTICIPATION MOVEMENT

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Abstract. *Marine pollution caused by plastic waste is a serious threat to the sustainability of Indonesia's marine and fishery resources. As the largest archipelagic country, Indonesia faces major challenges in controlling the influx of plastic waste into the ocean, most of which originates from land-based human activities. In response, the Ministry of Marine Affairs and Fisheries (MMAF) launched the Sea Love Month (Bulan Cinta Laut or BCL) program in 2022 as an innovative initiative based on fishermen's participation in tackling marine plastic pollution. This movement supports the national target of reducing marine debris by 70% by 2025, as mandated by Presidential Regulation No. 83 of 2018. BCL emphasizes the active involvement of fishermen in collecting plastic waste during fishing activities, while also strengthening public awareness and education in coastal communities about the importance of maintaining ocean cleanliness. This program is part of MMAF's blue economy policy, which promotes a pentahelix collaboration approach involving government, business sectors, academia, communities, and media. As of 2024, BCL has reached 54 coastal locations across Indonesia, involving more than 4,600 fishermen and successfully collecting over 1,000 tons of marine debris. With its community-based and sustainable approach, BCL serves not only as a marine pollution control initiative but also as a platform to foster collective awareness and social responsibility for the marine environment. The program demonstrates that synergy between government policy and grassroots action is essential to addressing the crisis of marine plastic pollution in Indonesia.*

Keywords: *Blue Economy; Fishermen Participation; Plastic Waste; Policy Innovation; Sea Love Month*

1. INTRODUCTION

Marine debris, commonly known as marine litter, refers to solid materials that are directly or indirectly, intentionally or unintentionally, discarded and left in the marine environment (NOAA, 2013). The existence of marine litter has implications for human health and other marine organisms, particularly humans who consume seafood contaminated with marine waste.

Since 1907, more than 8.3 billion tons of virgin plastic have been produced, yet only 9% has been recycled. Most plastic ends up in landfills, is burned, or pollutes soil, forests, and oceans (ESCAP, 2022). In Indonesia, 80% of marine debris originates from land-based activities, 30% of which is plastic waste. These plastics accumulate not only in open seas but also in seagrass beds, mangroves, and uninhabited islands. These remote and protected zones are highly vulnerable because they are marine breeding grounds.

The economic impact is also significant due to plastic's persistence in the environment. Asia contributes 81% of global marine plastic pollution, with the Philippines, India, and Malaysia dominating the top emitting rivers. In 2021, Indonesia ranked fifth globally, contributing around 56,000 tons of marine plastic waste.Moreover, ocean currents such as the Indonesia Throughflow (ITF) carry waste across Indonesian waters from the Pacific to the Indian Ocean, making Indonesia a potential accumulation hotspot.

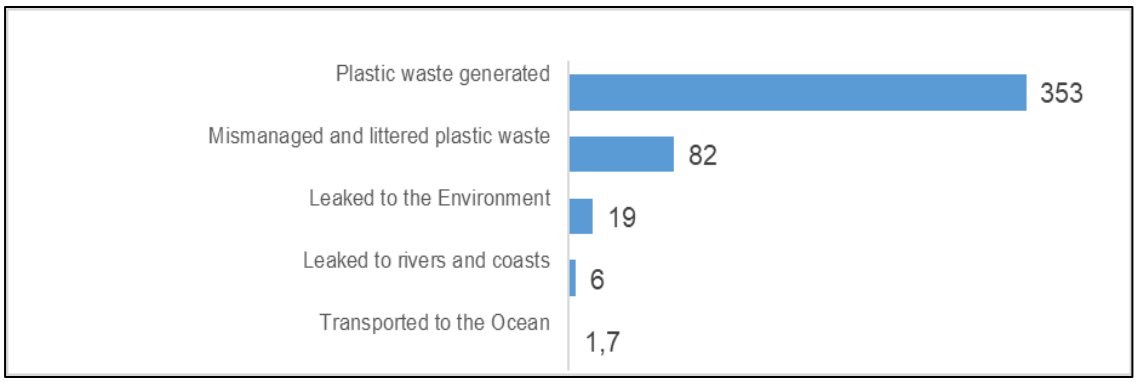

Figure 1. 0,5 percent of plastic waste ends up in the ocean.
(Source: OECD Global Plastik Outlook, 2022. OurWorldinData.org)

With a discharge rate of between 1.1 and 11.6 million m3 per second, the Indonesian Ocean Current (Arlindo) carries plastic waste from the Pacific Ocean across Indonesia's internal waters to the Indian Ocean. Indonesia, an archipelagic nation located on the equator, is significantly impacted by this natural current. The distribution of islands acts as a transit point for waste, particularly plastic waste. (KKP, 2023).

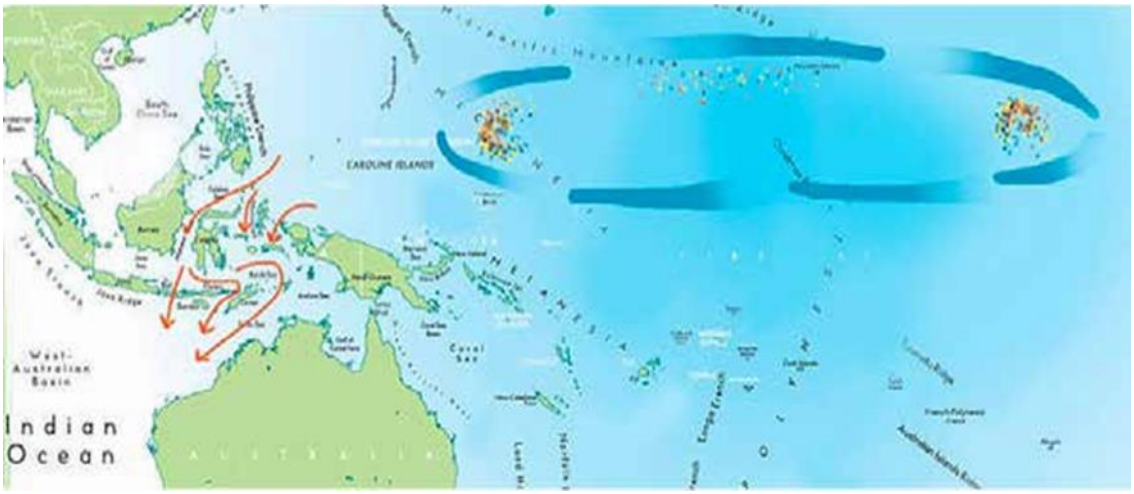

Figure 2. Great Pacific Garbage Patch (GPGP) dan Indonesian Cross Currents (Arlindo)
(Source: Martine Oger diolah oleh KKP, 2022)

Research shows that one of the drifters released from the Cisadane River estuary on Java Island arrived in Madagascar, off the east coast of Africa, after a year. This suggests that waste from or passing through Indonesian waters will eventually reach the Indian Ocean. (KKP, 2023).

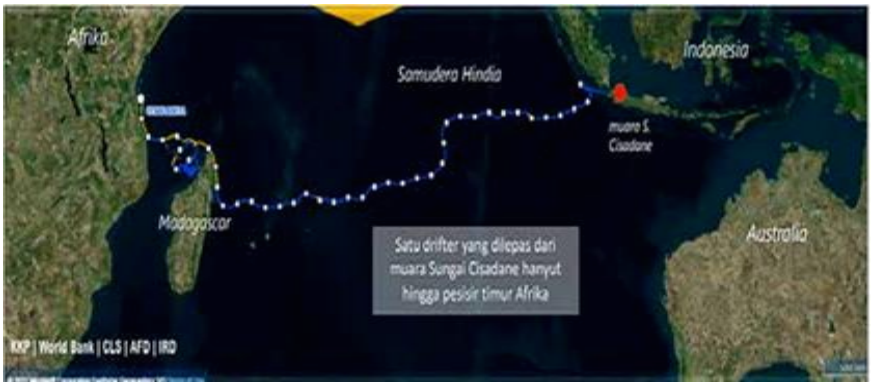

Figure 3. Trajectory of Trash from the Cisadane River Estuary Jawa Barat
(Source: KKP, World Bank, CLS, AFD, IRD, 2021)

2. LITERATURE REVIEW

2.1 Community-Based Environmental Innovation

Community-based environmental programs have emerged as critical approaches to addressing ecological challenges at the grassroots level. According to Ostrom (1990), local community engagement in resource management can generate more effective and sustainable outcomes compared to top-down regulation. In the context of marine pollution, initiatives that empower local actors, such as fishermen, have shown increased compliance and ownership of environmental protection efforts (Agrawal & Gibson, 1999).

Participatory marine conservation is rooted in the theory of social capital and collaborative governance, where trust, norms, and networks foster collective action (Pretty & Ward, 2001; Ansell & Gash, 2008). This framework supports the premise that environmental innovation must involve multiple stakeholders for long-term success (Elzen, Geels, & Green, 2004). Scholars have also emphasized that innovative programs like Sea Love Month (BCL) contribute not only to pollution control but also to behavioral change in coastal communities (Henry & Loupias, 2025).

However, innovation alone is not enough. Its success depends on institutional frameworks, consistent funding, and strong community leadership (Mitchell & Smith, 2017; Loupias, 2023). When implemented correctly, such programs create pathways for transformative environmental governance (Thomson, Coyne, & Davis, 2015).

2.2 Plastic Waste and Marine Policy Reform

Plastic pollution has reached alarming levels globally, with Asia being the dominant source due to urban density, poor waste infrastructure, and inadequate enforcement (Jambeck et al., 2015). Recent studies show that Indonesia is one of the top contributors to ocean-bound plastic waste, necessitating systemic reform in waste governance (Lebreton et al., 2017; Borrelle et al., 2020).

Policy frameworks must integrate circular economy principles to effectively mitigate marine debris (Ellen MacArthur Foundation, 2016; UNEP, 2021). Government-led efforts require cross-sector collaboration to redesign marine waste collection, sorting, and recycling systems (Bergmann, Gutow, & Klages, 2015). More importantly, awareness campaigns and education initiatives are proven to change public behavior towards responsible plastic use (Koelmans et al., 2017).

Moreover, digital monitoring tools such as satellite tracking and AI-based waste analytics have been introduced to support evidence-based marine policy (Schuyler et al., 2021). Indonesia's Sea Love Month program represents an example of how national strategies align with international best practices to address plastic pollution through participatory and data-informed approaches (MMAF, 2023; Henry & Loupias, 2025).

2.3 Local Perspectives on Community-Based Marine Waste Management

In Indonesia, several scholars have emphasized the importance of community participation in marine conservation and pollution control. According to Satria (2009), community-based management (CBM) in marine and fisheries sectors is most effective when grounded in local socio-cultural norms and supported by enabling policies from the state. Satria argues that traditional marine tenures (hak ulayat laut) can serve as a foundation for modern environmental governance, provided they are respected and institutionalized.

In the context of marine debris management, Adyas (2020) highlights that fishermen are not only victims of ocean pollution but also potential agents of change in protecting coastal ecosystems. Empowering fishermen through incentive-based programs can significantly increase their motivation to engage in marine waste collection and monitoring activities. Meanwhile, Fitriani and Sulaiman (2021) emphasize the role of social capital, including trust, shared norms, and networks, in sustaining local environmental initiatives such as coastal clean-ups and waste bank programs in coastal villages.

Government-led initiatives like Indonesia's National Action Plan on Marine Debris (RAN PSL) have also paved the way for multi-stakeholder collaboration. As stated by Kementerian Kelautan dan Perikanan (KKP, 2021), integrating local actors—including fishing communities—into marine plastic waste governance can enhance program legitimacy and ensure long-term behavioral change. The Sea Love Month (BCL) program is a reflection of such integration, combining national-scale coordination with community-level engagement.

These Indonesian studies reinforce the global literature on participatory environmental governance and validate the importance of adapting marine waste programs to local contexts. They also affirm that policies like BCL must be rooted in inclusive, culturally appropriate, and economically viable mechanisms to foster genuine and lasting participation.

3. RESEARCH METHODS

This study employed a qualitative descriptive approach to explore the implementation and innovation of the Sea Love Month (BCL) program by the Ministry of Marine Affairs and Fisheries. Referring to Creswell (2014), qualitative methods are suitable for understanding complex social phenomena through naturalistic inquiry. The research adopted a case study design (Yin, 2018), focusing on selected coastal regions—such as Natuna, Serang, Cilacap, and Makassar—where BCL was actively implemented. Data were collected between January and March 2024, chosen to coincide with the program's second year of expansion to 54 locations. Respondents were purposively selected, including fishermen, BCL coordinators, and MMAF officials who had been directly involved in the program for at least one year.

Data collection techniques included in-depth interviews and document analysis. In-depth interviews were used to capture firsthand experiences and perceptions, while program reports and official documents provided contextual and factual support. This combination ensured data triangulation and enriched the research findings. The data analysis followed the interactive model of Miles, Huberman, and Saldaña (2014), consisting of data reduction, data display, and conclusion drawing. This method allowed the researcher to interpret patterns and relationships within the data, assess the program's relevance to the research objectives, and reflect on its contribution to marine policy innovation and participatory governance.

4. RESULTS AND DISCUSSION

4.1 Effectiveness of Fishermen Participation in Waste Reduction

One of the main objectives of this study is to evaluate how the Sea Love Month (BCL) initiative, through fishermen participation, contributes to reducing plastic waste in Indonesian marine areas. The data from the Ministry of Marine Affairs and Fisheries (MMAF) show that from 2022 to 2024, over 1,000 tons of marine waste were collected across 54 coastal locations with the involvement of more than 4,600 fishermen. These results indicate that mobilizing coastal communities through a structured campaign has proven effective in curbing marine debris. The direct participation of fishermen ensures both consistent waste retrieval and increased environmental awareness, turning passive actors into active agents of change.

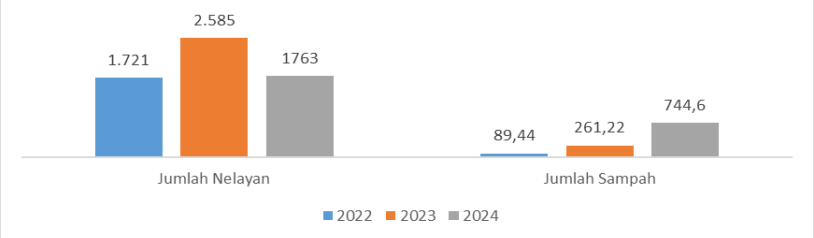

Figure 4. Number of Fishermen who participated and the amount of waste collected (Source: KKP, 2024)

The kick-off for the Love the Sea Month program was held on January 28, 2022, at Parangkusumo Beach, Bantul Regency, Yogyakarta Special Region Province, covering a 1.53-kilometer journey from Parangkusumo Beach to Parangtritis Beach. Participants included 500 people from the Ministry of Marine Affairs and Fisheries (KKP), Indonesian National Armed Forces (TNI) and Indonesian National Police (Polri), fishermen's groups, local government representatives, student representatives, KKP partners, and environmental activists. This program, the Clean Beach and Sea Movement (GBPL), demonstrates KKP's commitment to preserving and maintaining the health of marine ecosystems in accordance with the principles of a blue economy.

Figure 4. Minister of Maritime Affairs and Fisheries Sakti Wahyu Trenggono at the National Love the Sea Month Press Conference in Jakarta
(Source: https://images.app.goo.gl/5sQfH9NgWeH6QVVJ7)

At the Peak Appreciation Event of the Sea Love Month Movement at the Losari Beach Pier in Makassar, South Sulawesi, Thursday (29/8/2024), it is hoped that the National Sea Love Month Movement (Gernas BCL) will be able to build collective awareness in managing plastic waste in the sea. Since its launch in 2022, Gernas Sea Love Month has been implemented as a joint action and focus that contributes to strategies and commitments for handling marine waste, can provide a multiplier effect to all levels of society, especially fishermen, and especially for the sake of clean and healthy seas.

Figure 5. The 2024 Love the Sea Month Highlights in Makassar
(Source: https://kkp.go.id/news/news-detail/menteri-trenggono-sebut-bcl-berhasil-bangun-sinergitas-pengelolaan-sampah-plastik-di-laut-YW9K.html.)

4.2 Alignment with the Blue Economy and Collaborative Governance

The BCL program aligns closely with Indonesia's national Blue Economy policy, which promotes sustainability through a multi-stakeholder or pentahelix model involving government, private sector, academia, civil society, and media. The involvement of these stakeholders reflects the theory of collaborative governance (Ansell & Gash, 2008), where inclusive dialogue and shared responsibilities enhance policy implementation. The program also confirms Ostrom's (1990) theory on community-based resource management, demonstrating that sustainable solutions often emerge from bottom-up engagement. Compared to top-down approaches that often face resistance or low compliance, BCL has gained legitimacy through local ownership and continuous socialization.

Figure 6. Beach clean-up activities as part of the Love the Sea Month series in Banggai Island, Aceh and Bali
(Source:https://images.app.goo.gl/Awimyj8rVx51vXAU8,
https://images.app.goo.gl/agkafzWF8UYFNBEX6,
https://images.app.goo.gl/E6CbqiEamxbSHDBS6)

4.3 Behavioral and Cultural Shift in Coastal Communities

A critical yet less tangible outcome of BCL is the observed behavioral transformation among coastal populations. Many fishermen, initially indifferent to the issue of marine debris, have started perceiving waste as a threat to their livelihoods and marine biodiversity. This shift is consistent with environmental psychology theory, which posits that sustained engagement and empowerment foster intrinsic motivation (Kollmuss & Agyeman, 2002). Interviews and field reports from MMAF officers confirm that community leaders and fishermen's groups now organize independent clean-up activities even outside the BCL campaign window, signaling a deeper cultural change toward ocean stewardship.

Figure 7. Governor Mahyeldi while attending the commemoration of the national movement Love the Sea Month (BCL) - Fishermen's Participation Movement for Marine Waste Disposal, Wednesday (06/09/2023) at Muaro Lasak Beach, Padang City.
(Source: https://www.metrokini.com/2023/09/06/di-kota-padang-nelayan-paling-banyak-kumpulkan-sampah-dapat-hadiah-umrah/)

Figure 8. An effective barrier that traps plastic and other waste before it reaches the ocean (Source: Roberto Charless Sanchez)

4.4 Comparison with Global Practices and Policy Implications

Compared to similar global initiatives, such as Costa Rica's River waste barrier program or The Ocean Cleanup's passive net systems, BCL stands out for its emphasis on human participation and social learning. While many technologies focus on the symptoms (i.e., capturing waste), BCL addresses root causes by involving the people most affected. This approach supports theories of environmental governance that stress the integration of technical, institutional, and social innovations (Lemos & Agrawal, 2006). From a policy perspective, BCL provides a replicable model for marine nations facing similar socio-ecological dynamics, particularly where governmental reach is limited in archipelagic or rural areas.

In the Netherlands, fishermen voluntarily collect marine debris that gets caught in their fishing nets and bring it back to port using special collection bags known as "Big Bags." This program is coordinated by KIMO International and operates in major ports such as Harlingen, Den Helder, and Vlissingen, collecting over 300 tons of marine litter annually (kimointernational.org). The image below shows fishermen unloading Big Bags on the quay after returning from sea (kimointernational.org). This scheme illustrates the integration of participatory training for fishermen, logistics systems for waste collection, and efficient onshore waste management. The result is a significant reduction in ocean waste and heightened environmental awareness among Dutch coastal fishing communities.

Figure 9. Fishermen in the Netherlands unloading waste in big bags. (Source: https://www.kimointernational.org)

Figure 10. In a small coastal town on the Sea of Japan,
a group of people is working diligently to keep the beaches clean.
(Source: https://www.japan.go.jp)

In Japan, fishermen belonging to Fisheries Cooperative Associations (JFCA) actively participate in scheduled coastal clean-up campaigns and receive symbolic rewards or modest compensation from local governments. The initiative is supported by municipalities and integrates marine environmental education for fishermen's families, emphasizing the value of preserving the ocean for future generations (en.wikipedia.org). The second image shows Japanese locals and fishermen engaging in routine beach clean-ups, including children and teachers as part of community-based environmental education efforts.

From both international examples, it is evident that involving fishermen in marine plastic waste management can succeed if accompanied by incentives, portside waste reception systems, and community education strategies. Indonesia's Sea Love Month (BCL) program can adopt elements of these models—such as establishing designated waste reception points at fishing ports, providing ongoing training, and offering recognition-based incentives to participating fishermen. Doing so would help transform BCL from a periodic campaign into a long-term, institutionalized mechanism for plastic waste management that supports national coastal and marine policy frameworks.

4.5 Contribution to Theory and Practice in Marine Waste Management

The findings of this study contribute to both theoretical and practical domains. Theoretically, it reinforces the relevance of social capital and participatory governance theories in managing common-pool resources like marine ecosystems. Practically, it showcases how policy innovation rooted in local action can be scaled nationally. BCL's impact also implies that behavior-based programs, when institutionalized, can significantly complement infrastructure-based solutions such as waste banks or landfill regulations. The implications for marine policy are clear: community-based programs must be integrated into national waste strategies, not as auxiliary efforts but as core components. The success of BCL affirms that effective marine waste management is not solely a matter of engineering solutions, but also of cultivating civic responsibility and long-term behavioral change.

CONCLUSION

The Sea Love Month (BCL) program demonstrates that community-based innovation, when designed with inclusive participation and integrated into national policy frameworks, can serve as an effective mechanism for addressing marine plastic pollution in Indonesia. The involvement of fishermen as active agents in environmental protection

reflects a successful alignment between grassroots engagement and governmental strategy. More than just a clean-up campaign, BCL has catalyzed a behavioral shift within coastal communities, fostering environmental awareness and ownership. This transformation validates the relevance of participatory governance and collaborative action in tackling complex ecological problems. Moreover, BCL presents a scalable model that contributes to the broader agenda of sustainable marine resource management under the Blue Economy framework. It reinforces the notion that meaningful environmental change is not only driven by regulations or technology, but by human-centered approaches that empower local communities to become stewards of their ecosystems. The findings of this study affirm that policy innovations rooted in local context and sustained by multilevel cooperation hold the key to long-term marine conservation success.

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