

Permanently polluted paradise? Gender inequality, care work, and community acts to waste problems in West Nusa Tenggara, Indonesia

Diana Teresa Pakasi^{1*}, Marini Purnamasari²

¹Department of Sociology, Faculty of Social and Political Sciences, Universitas of Indonesia, Jl. Prof. Dr. Selo Soemardjan, Depok, Jawa Barat, Indonesia 16424

²Center for Gender and Sexuality Studies, Faculty of Social and Political Sciences, Universitas Indonesia, Jl. Prof. Dr. Selo Soemardjan, Depok, Jawa Barat, Indonesia 16424

*Corresponding author

E-mail address: diana.pakasi@ui.ac.id

DOI: <https://doi.org/10.21107/sml.v7i2.27478>

ARTICLE INFO	ABSTRACT
<p>Keywords: waste management gender small tourism islands feminist political ecology Indonesia</p>	<p>This article addresses the complex challenges of waste management on small islands in Indonesia, focusing on the impact of tourism and community response, particularly from a feminist political ecology (FPE) perspective. It argues that the current neoliberal and technocratic approaches to waste management are insufficient and often perpetuate gender inequalities. It calls for more inclusive and equitable waste management policies that recognize the contributions of all community members, particularly women. The research underscores the need for a gender-equitable approach to environmental governance to achieve sustainable waste management and environmental justice. The research employed focused ethnography in North Lombok Regency, involving in-depth interviews and focus group discussions. Our research found that while government efforts primarily focus on maintaining cleanliness for tourism, these initiatives often neglect inequalities in waste management strategies. Women play a crucial role in these grassroots initiatives, performing unpaid care work to manage waste, but face significant health risks and receive little recognition or support. The study recommends a shift from a tourism-centric approach to a community-centered model that invests in sustainable, long-term solutions prioritizing local needs, environmental health, and the empowerment of women, addressing environmental justice issues linked to tourism and waste accumulation.</p>

Citation suggestion:

Pakasi, D. T., & Purnamasari, M. (2024). Permanently polluted paradise? Gender inequality, care work, and community acts to waste problems in West Nusa Tenggara, Indonesia. *Simulacra*, 7(2), 269–283. <https://doi.org/10.21107/sml.v7i2.27478>

Introduction

Sustainable waste management on small islands has been a major challenge, especially for those in developing countries. Studies have highlighted several challenges these islands face, such as their remoteness, limited land availability for waste management, absence of planning and formal procedures, lack of policy enforcement, insufficient political will, and inadequate funding (Mohee et al., 2015; Agamuthu & Herat, 2014; Fuldauer et al., 2019).

Indonesia comprises 13,558 islands, 87% of which are less than one square kilometer in size, and 39% are less than one hectare, emphasizing the predominance of small to very small islands (Andréfouët, Paul, and Farhan, 2022). Waste management is a pressing issue on small islands, exacerbated by tourism, which is a major waste generator and poses significant risks of environmental degradation (Mohee et al., 2015; Daby, 2003). Studies show that small tourism islands in Indonesia, such as the Gili Islands, Langkawi, and Bunaken Islands, are overwhelmed by solid waste from tourism, worsening water pollution (Kurniawan et al., 2016; Shamsiry et al., 2011; Tallei et al., 2013; Willmott & Graci, 2012; Sekito et al., 2019).

Despite the environmental risks, marine tourism remains a crucial economic driver in Indonesia (Hampton & Jeyacheya, 2015; Kurniawan et al., 2016). Some small islands, like the Gili and Lombok Islands in West Nusa Tenggara province, are designated as National Tourism Strategic Areas by Indonesian Government Regulation Number 50 of 2011. Therefore, implementing sustainable waste management on small islands is critical for development. Unmanaged plastic waste has become an urgent public health concern as it discharges into rivers and oceans, breaking down into tiny fragments and contributing to microplastic pollution in coastal areas of Indonesia (Utami et al., 2023; Hakim et

al., 2023; Firdaus et al., 2020). This problem is worsened by the prevalent practice of open burning, producing significant air pollutants and leaving harmful residues that contaminate soil and water (Pathak et al., 2023).

Sustainable waste management on small islands aligns with the United Nations' Sustainable Development Goals (SDGs) indicators 11 (making cities and human settlements inclusive, safe, and sustainable), 12 (ensuring sustainable consumption and production patterns), and 14 (conserving and sustainably using the oceans, seas, and marine resources for sustainable development). To address waste problems, Indonesia has issued regulations for solid waste management. National policies are comprehensive providing a legal framework for solid waste management such as the Law of the Republic of Indonesia No. 18/2008 on Waste Management; the Regulation of the Minister of Public Works No. 3/2013, detailing the implementation of infrastructure and facilities for handling household and similar waste; the Government Regulation No. 81/2012, which covers waste sorting, collection, transportation, and final processing; the Regulation of the Minister of Public Works and Public Housing No. 3/2013, specifying technical requirements for waste collection, treatment plants, and 3R (Reduce, Reuse, Recycle) facilities; and the Regulation of the Minister of Environment No. 14/2021, which provides guidelines for waste management through waste banks. However, there are issues of ambiguity at the local level, limited stakeholder involvement in policymaking, and a lack of enforcement at the local level (Purba & Erliyana, 2020). This article further depicts that waste management problems, particularly on small tourism islands, are not merely managerial and technocratic.

We argue that the Indonesian state's approach to waste problems tends to be

neoliberal, managerial, and technocratic, neglecting the imbalanced power relations between the community, capitalists, and the state regarding land and resources. In the context of North Lombok that is a tourist destination, waste problems and strategies are impacted by tourism industries that bring global tourists. The local community, significantly impacted by tourism capitalism in their land and burdened by waste problems, is often neglected or positioned merely as objects of waste management). In this article, we aim to further explore the ways in which local communities respond to waste problems. Previous studies have emphasized the importance of community's participation in sustainable waste management efforts (Agamuthu & Herat, 2014; Khair, Lee, & Mokhtar, 2020; Wang, Lee, & Mokhtar, 2021; Fuldauer et al., 2019). Regarding the gender dimension in waste management, studies show that women often engage in underpaid or unpaid work to care for the environment, such as recycling, sorting, or cleaning waste (Hanson, 2015; Scheinberg et al., 1999; McCright & Xiao, 2014; Wilde & Parry, 2022; Pakasi et al., 2024). However, there is little research on the intersection of gender and waste management in tourism areas.

With regard to ongoing tourism, this article is inspired by the work of Max Liboiron's perspective that pollution is a form of colonialism (Liboiron, 2021), reflecting continued exploitative relations. In this context, the concept that "pollution is colonialism" represents the ongoing exploitation of land, specifically environmental degradation driven by tourism capitalism, where natural resources are commodified and depleted for profit. Hence, pollution and toxicity should be understood as reproductions of power dynamics and injustices that perpetuate colonial patterns of land exploitation (Liboiron, Tironi, & Calvillo, 2018).

This article delves into the ways communities act to handle waste problems in areas impacted by tourism, specifically in North Lombok of West Nusa Tenggara province, Indonesia. The province is notably celebrated for its marine tourism, which, according to the National Statistics Agency, contributed to a 7.1% increase in the province's economic growth in 2022 (Antara News, 2024). However, the growth in tourism has disproportionately impacted the local community, especially women, leaving them more marginalized and vulnerable to pollutant exposure than men. This article uses Feminist Political Ecology (FPE) that serves as an analytical tool to explore local experiences regarding gendered rights and responsibilities within waste management practices and, more broadly, in maintaining a healthy biophysical environment (Rocheleau, Thomas-Slayter, and Wangari, 2013). Additionally, FPE is crucial for identifying strategies that actors—men and women—employ to adapt to environmental changes, shedding light on the dynamics between institutional, political, and economic processes (Rocheleau and Roth, 2007).

We suggest that waste management efforts should be socially inclusive, considering the diverse impacts on different community members to create more effective and equitable environmental policies and practices.

Method

This paper is derived from a focused ethnography conducted in the period of August 2022–August 2024 in the North Lombok Regency of West Nusa Tenggara province. The regency is renowned for its tourist attractions, including the Gili Islands and the transit area for the Mount Rinjani hiking trail. We selected the villages of Tanjung and Teniga, in Tanjung Subdistrict, Lombok. Teniga is a rural, agricultural

village that lacks waste collection services, leading residents to dispose of waste in backyards, vacant gardens, or directly into the river, which flows into the Sokong River. The Sokong River then passes through Tanjung village before reaching the ocean. Tanjung is a coastal village bustling with villas and hotels, serving as a transit hub for tourists traveling to Mount Rinjani or the Gili Islands. Among the Gili Islands in North Lombok, Gili Trawangan, the focus of our research, is the largest and most densely populated.

Participants, totaling 42 participants, included women from farming groups, waste bank activists, community health cadres, environmental activists, village officer, the administrator of TPST (*Tempat Pengolahan Sampah Terpadu*—Integrated Waste Management Facility) in Gili Trawangan island, and the administrator of the North Lombok waste bank.

We did three focus groups with women’s groups: two in Teniga village and one in Tanjung village. We did more focus groups in Teniga village since there were more women’s groups working on environmental issues than in Tanjung village. The participants of the FGDs were women farmer’s groups (Kelompok Wanita Tani), women’s school, and women village

cadres. The in-depth interviews were done with members of women’s groups, waste bank activists, community leaders and village officers, environmental activists, a TPST administrator, a small hotel owner and a local resident in Gili Trawangan.

All focus group discussions and interviews were transcribed and coded using NVivo 13. Codes generated from the NVivo were analyzed to identify the main themes of the research findings such as waste problems, waste disposal practices, waste infrastructures, care work, and community initiatives. Consent was obtained from all study participants, and all transcripts were anonymized before being uploaded into NVivo.

Results and Discussion

Waste practices and infrastructures in North Lombok

“Waste problems are longstanding issues, yet we have not been able to resolve them due to the complexity of waste management,” mentioned Abdul (pseudonym), a co-founder of a community-based waste management organization known as a waste bank (*bank sampah*), in the North Lombok District of West Nusa Tenggara province. In our study,

Table 1. Number of study participants based on their background

Background	Participants
Women’s group (farming groups, cadres) in Teniga village	10
Women’s group (farming groups, cadres) in Tanjung village	10
Community leaders/village officers in Teniga village	3
Community leaders/village officers in Tanjung village	3
Waste bank activists	2
Environmental activists	2
TPST administrator	1
Small hotel owner and resident in Gili	2
Total	42

the waste bank (*bank sampah*) is a community-driven initiative where residents can sort and deposit their recyclable waste, which is then collected, processed, and often sold for profit. The complexity of waste management stems largely from the limited capacity of the government to manage waste effectively, leading to the coexistence of various formal and informal waste management practices that often conflict and contradict each other within the community. Additionally, tourism in West Nusa Tenggara has become a significant source of waste. The growth of the tourism industry is frequently accompanied by increased consumption and the use of single-use materials, which, in turn, increases the volume of waste produced. Consequently, the rising number of tourists visiting a destination directly impacts the increase in waste generation in the area, affecting three main sectors: households, the public sector, and tourism.

In North Lombok, the Regional Strategy Policy (Jakstrada, which stands for *Kebijakan dan Strategi Daerah*) was developed as the foundation for policies and strategies aimed at managing and reducing waste. As part of this policy framework, a waste bank was established in North Lombok in 2021 to assist the local government with recycling efforts and to educate households on waste reduction. Currently, the waste bank's operations extend to three villages: Genggelang, Gondang, and Tanjung. Education on recycling and waste reduction is conducted in collaboration with the integrated health post, a village-level health service predominantly managed by women.

In North Lombok District (*Kabupaten Lombok Utara*—KLU), the issue of landfill capacity is a significant concern. According to data from the North Lombok waste bank, the region's landfills are reaching critical levels, with an average daily waste production estimated at 256,438 kilograms. Tanjung Village alone contributes approximately

56,223 kilograms of waste per day (Bank Sampah Persada Lotara, 2023). According to Abdul (pseudonym), a local activist and the chairman of the North Lombok waste bank reports that they can process up to about 500 kilograms of organic waste daily. This amounts to the waste bank successfully managing and processing around 15 tons of organic waste each month. However, this substantial effort to manage waste contrasts sharply with the local government's waste collection coverage. The scope of waste collection services provided by the local government varies significantly, ranging from as low as 14.2% in the Bayan Subdistrict to as high as 87% in the Tanjung Subdistrict, which serves as the administrative center of North Lombok Regency (Dewi et al., 2022).

Based on our waste sampling conducted with 20 households, including members of waste banks, farmers' groups, and prominent women in Tanjung and Teniga villages, we found that only a few households recycle their waste, and many throw their waste to the river (see supplement 1).

Despite the availability of waste collection services, villagers continue to illegally dump waste into the river. As mentioned by a woman during a focus group discussion (FGD) in Tanjung village, "The items most commonly thrown into the river include sanitary napkins and baby diapers. Many baby diapers are dumped several times a day. We place the used diapers in a plastic bag and then throw it into the river. Diapers are thrown into the river because it is believed to cool the baby's bottom and prevent rashes."

In the heart of the tourist area, Gili Trawangan, daily waste generation significantly surpasses other areas. According to the Head of the North Lombok Environmental Agency and our interview with the Persada Lotara Waste Bank, the waste production on Gili Trawangan currently amounts to 12–15 tons per day,

correlating with the surge in tourism activity on the island. However, the capacity of community group (KSM—*Kelompok Swadaya Masyarakat*) to process waste is limited to only 1.5 to 2 tons per day (Bank Sampah Persada Lotara, 2023).

Data from the Central Bureau of Statistics of North Lombok Regency (BPS Lombok Utara, 2024) highlights the remarkable growth in the region's tourism sector. In 2021, North Lombok boasted 441 hotels, with domestic tourist visits totaling 14,151 and foreign tourist visits at 17,604. By 2023, the number of hotels has almost double to 851, reflecting the burgeoning tourism industry. Concurrently, domestic tourist arrivals soared to 74,470, while foreign tourist visits surged to 581,980. This dramatic increase in tourism has directly impacted the volume of waste generated on Gili Trawangan.

Based on interviews with environmental activists in North Lombok, the North Lombok Government has established a District Integrated Service Unit (UPTD—*Unit Pelaksana Teknis Daerah*) for Waste Management and a Village Combined Waste Treatment Plant to facilitate waste processing. However, recycling and other forms of waste processing have not been implemented effectively, leading the UPTD to merely transport household waste directly to the final dumping site. The government's efforts are primarily focused on the transportation of waste, with no initiatives to educate the community on waste reduction. This emphasis on keeping the city clean for tourists, without addressing the need for waste reduction education, exacerbates the issue of already overflowing landfills. Without governmental intervention, the waste processing endeavors undertaken by waste banks and community groups become ineffective, as the volume of waste far exceeds their processing capacity.

According to the Head of the North Lombok Environmental Agency, there are

16 integrated waste processing sites for recycling in North Lombok, with each place getting a budget of 600 million rupiah per year from the local government, but based on interviews with environmental activists, 15 existing waste processing sites have not been operating since the last two years. The government is more inclined to carry out garbage cleaning programs in the city such as Clean Up Day, which leads to a surge in waste sent to landfills.

On Gili Trawangan Island, there exists an integrated waste processing site that is currently non-operational. We noticed numerous garbage heaps surrounding the facility on Gili Trawangan. In the dry season, characterized by hot and dry weather, this site becomes particularly vulnerable to fires. During our data collection, the integrated waste processing site experienced a fire (Figure 1). Efforts to extinguish the fire were hindered by the hot, dry conditions, strong winds, and a lack of water sources on site. While there were no injuries reported from the incident, the fire produced dense smoke that disrupted the daily activities of both residents and tourists on Gili Trawangan. According to an in-depth interview with the administrator of the integrated waste processing site on Gili Trawangan, the facility is not operational because it lacks the capacity to handle the volume of waste, which can exceed 5 tons per day. The staff at the site expressed frustration over the government's lack of responsiveness and absence of leadership in addressing waste management challenges.

The accumulation of waste in Gili Trawangan island might affect the groundwater quality. Some local people said that in some areas, the water, which is already salty, sometimes smells like garbage too.

Due to the limited capacity of the community groups to process waste and the near absence of waste processing facilities

Figure 1. Burning near the Integrated Waste Processing Site in Gili Trawangan



Source: Research field documentation

from the local government, landfills are reaching full capacity. As a result, the waste will continue to accumulate and pollute the island.

Community's act to respond to waste problems

The environmental care community front (FMPL—*Forum Masyarakat Peduli Lingkungan*) in Gili Trawangan. A community initiative, known as the Environmental Care Community Front (FMPL), has been established to tackle waste issues on Gili Trawangan. This initiative works in collaboration with Gili Eco Trust, a non-governmental organization founded in 2000 with the mission to protect coral reefs and the environment in Lombok, West Nusa Tenggara. FMPL is responsible for collecting waste from hotels, restaurants, cafes, and residences, transporting it to the final landfill. Together, these organizations strive to mitigate the problem of littering on Gili Trawangan. A member of the initiative described their efforts: "Big hotels have already begun to sort their waste to a certain extent. For waste from restaurants, such as vegetable scraps, we create compost. Non-organic waste, like plastic and glass bottles,

Figure 2. Burning near the Integrated Waste Processing Site in Gili Trawangan



Source: FMPL member collecting waste in Gili Trawangan (Source: Research field documentation)

is sold to waste processing companies in Surabaya. For example, beer bottles are sent to Surabaya to be recycled. The waste designated for sale is transported by boat to Lombok and then sent on to Surabaya for processing."

Tourists frequently participate in the FMPL's initiatives to clean up the island. Several bars incentivize this participation by offering free beers to tourists who join the cleanup activities. The waste gathered during these events is subsequently sorted, and a portion of it is sold to waste pickers. The FMPL's activities, including collecting, transporting, sorting, and selling waste, are predominantly carried out by men who get paid and sell the valuable waste to waste pickers, collectors, or waste processing companies.

The FMPL demonstrates how a small community addresses waste disposal primarily generated by the tourism industry. Previous research has highlighted the contributions of small communities in low- and middle-income countries to sustainable

solid waste management. However, these communities face challenges, such as limited capacity and technology for waste management, low levels of citizen participation, and insufficient public investment and funding (Ferronato et al., 2019). Our study finds similar barriers in the case of FMPL. As a result, FMPL struggles to manage waste disposal effectively, leading to a growing accumulation of waste on Gili Trawangan.

UJO community in Tanjung Subdistrict

UJO was a community that was initially named after its founders who were activists and community leaders in the Tanjung Area. UJO was then named *Utara Jaya Organik*. UJO was founded in 2020 to increase public awareness about waste issues in North Lombok. Motivated by concerns over pollution in the Sokong River, which flows through North Lombok Regency into the sea, the group initiated a river cleaning program. However, they quickly became overwhelmed by the sheer volume of waste produced by local residents.

The Sokong River is plagued by illegal dumping from four villages along its course, leading to pollution at the beach in Tanjung village. The shoreline, adjacent to numerous hotels, is littered with waste such as plastic bottles and baby diapers (see Figure 3). In response, the UJO community conducted raids to deter people from discarding trash in the river. Yet, this approach proved ineffective as disposing of waste in the river had become a habitual practice among residents, exacerbated by the absence of reliable garbage transportation services. Although UJO attempted to provide waste transportation, this solution was short-lived due to the overwhelming volume of waste and the community's limited resources. In terms of waste management, the community taught residents to compost vegetable and

Figure 3. *Garbage of plastic bottles and baby diapers on the Tanjung beach*



Source: Research field documentation

fruit waste and to produce animal feed from maggots that consume food waste. However, these initiatives were unsustainable as compost and animal feed failed to find a market.

According to UJO, the government appears disinterested in addressing waste issues. While it provides vehicles for waste transport, there is no support for operational staff or maintenance in case of vehicle breakdowns. The government's focus is on economic-boosting programs, such as developing a tourist village and creating a park along the Sokong River banks to enhance the city's appeal to tourists. Consequently, physical improvements aimed at beautifying the city take precedence over educating residents about waste management. UJO members said that the tourist village program will fail if the villagers still do illegal dumping to the river. A UJO member mentioned that the tourist village program will fail if the villagers continue to engage in illegal dumping in the river. UJO is only led by four people (three men and one woman) who at the community level work together

with the head of the hamlet or female village cadres.

North Lombok waste bank

Although the regulation on waste banks was only implemented by the Minister of Environment in 2021, community-level waste management initiatives have been underway for some time. The founder of Persada Lotara, the sole waste bank in North Lombok Regency, is both an environmental activist and an entrepreneur with extensive experience in the plastic waste processing industry. He has expanded his efforts to include the processing of kitchen waste, such as food scraps, vegetables, fruit, and used cooking oil. The waste bank converts kitchen waste into products like liquid fertilizer, animal feed, eco-enzymes, and hand soap. Additionally, plastic waste collected by the bank is shredded and sold to a processing facility in Surabaya, and the used cooking oil is also sold there.

To gather waste, Persada Lotara collaborates with integrated health post (*Posyandu*—*Pos Pelayanan Terpadu*) cadres in three villages and other individuals interested in contributing. During *posyandu* meetings, mothers not only bring their babies for health checks by village midwives but also bring used plastic waste and cooking oil to deposit with the *posyandu* cadres, who also serve as waste bank cadres. The waste bank purchases the plastic waste and used cooking oil, turning the proceeds into savings for the depositors, which they can withdraw at any time. The waste bank cadres, all of whom are women, sort the deposited waste and sell the plastic waste and cooking oil to Persada Lotara. One of the female cadres expressed, "All cadres are women, as it falls upon us - mothers to maintain the cleanliness of our homes and environment."

To maintain environmental cleanliness, waste bank activists also participate in

river clean-ups, especially when they notice excessive waste in the water. One woman activist from Tanjung village, Azwa (pseudonym) shared her experience during interview on September 28, 2023:

"Every morning, we look at the river, and we hate the view: various garbage, including plastics, diapers, and chicken slaughter remnants such as intestines and feathers. The smell is unbearable. So, we go down to the river and pick up the trash. We are also concerned about the risks, especially since children often play in the river."

However, the river remains full of waste, as waste continuously flows in, especially during the rainy season when garbage from upstream travels downstream to the sea. The women are critical of the lack of accountability for environmental cleanliness. Azwa (pseudonym), a community leader, expressed her frustration during a focus group discussion in Tanjung village, September 29, 2023:

"Who exactly should be responsible for the waste problem? Yes, we are not supposed to throw garbage in the river, so we must be aware and avoid littering. But there are no or very few waste collection facilities, so sometimes we feel 'forced' to dispose of waste in the river or elsewhere. In such cases, whose responsibility, is it? In the end, it is us mothers who diligently go out to clean up the garbage in the river."

Women are questioning who should be held accountable for the waste problem, highlighting a systemic failure to recognize the imbalanced power relations between local communities, the neoliberal waste management, and tourism capitalists. Our research results highlight a noticeable gender disparity in waste management practices and responsibilities in North Lombok, emphasizing the pivotal role women play in community activism to address waste problems. Women, often at the forefront of

community-based environmental actions, are key players in grassroots initiatives such as the women cadres of the Persada Lotara waste bank. Although community initiatives like the Environmental Care Community Front (FMPL) involve both men and women, men primarily participate in paid waste collection roles, while women's contributions, often unpaid, go largely unrecognized. The findings emphasize that women's work in this context is fundamentally care work. From a Feminist Political Ecology (FPE) perspective, care is understood as a multifaceted activity that supports both mental and political well-being, essential for societal development. This expanded concept of care calls for a broader responsibility that includes caring for both human and non-human beings, encouraging us to perceive the planet not merely as a resource repository but as a living community (Gomez, Voss, & Farrelly, 2023). Consequently, the notion of care, particularly in the context of managing waste in the community, river, and beach, extends beyond traditional gendered social reproduction. It includes cultivating nurturing relationships with the environment and non-human entities.

The intersection of gender, waste management, and tourism from the perspective of Feminist Political Ecology

Buechler (2016) highlights FPE frameworks for their ability to scrutinize social divisions of labor in natural resource management, emphasizing the importance of geographic and locational factors in these divisions. This perspective is pertinent for examining various waste management practices and environmental acts that are influenced by gender. Thus, FPE is essential for investigating different waste management strategies and activism through the lens of gender dynamics.

Aligned with the FPE framework, our research illustrates the gender dynamics in waste practices. Women are involved in managing waste at both household and community levels as the extension of their reproductive work and responsibilities. They participate in waste bank activities, recycling education, and river clean-ups. Their involvement extends to roles within integrated health posts, where they educate and engage households on proper waste management. This reflects traditional gender roles where women are primarily responsible for domestic and environmental cleanliness. However, women also face significant health and safety risks due to inadequate waste management infrastructure. For instance, women activists have expressed concerns about the dangers posed by polluted rivers. Despite their crucial role in community activism, women face substantial challenges due to limited waste collection facilities provided by the local government. The community and women's activism cannot manage the large amounts of waste disposed of in the river and on the land.

Our research shows that women's labor is essential for maintaining environmental cleanliness but is undervalued and unsupported by the local government, reflecting traditional gender roles where domestic and environmental care are seen as women's responsibilities. The establishment of waste banks provides women with a form of empowerment; however, this initiative also reproduces the gendered responsibility of women to care for the environment (Pakasi et al., 2024). Moreover, care work in clean-ups exposes women to health risks due to inadequate infrastructure and support. FPE scholars (Rocheleau, Thomas-Slayter, & Wangari, 1996; Elmhirst, 2011; Buechler, 2016) have long pointed out how women's environmental care work is often undervalued and invisible.

Gender inequality in care work to respond to waste problems is largely influenced by ineffective waste management policies from the local government. A significant aspect of waste management in West Lombok is the local government's tendency to prioritize the city's cleanliness to attract tourists. However, this approach often neglects the comprehensive aspects of waste management. In contrast, grassroots environmental activism in the area pursues broader objectives, focusing not only on littering but also on waste reduction and revalorization. These initiatives aim to transform waste materials into valuable resources that can be reused or recycled. Nonetheless, this activism exhibits a gendered pattern, with women predominantly engaged in grassroots efforts, including waste sorting and supporting waste revalorization. This underscores broader issues of gender inequality and economic disparities. Men, in contrast, are more commonly found in managerial roles within waste management (such as in waste banks) or involved in the revalorization of valuable waste (such as in FMPL), positions that are typically better compensated.

The ineffectiveness of the government's neoliberal waste management approach and the colonial mindset prioritizing tourism development suggests a focus on economic gains over environmental and community health, disproportionately impacting women. This illustrates how pollution operates as a form of colonialism, perpetuated by tourism development in conjunction with the neoliberal state approach to waste management. Previous studies, such as Cole (2017), have documented how tourism development in small islands differently affects men and women, often reinforcing gender stereotypes. Therefore, we echo Wilkinson and Pratiwi (1995) in advocating for a feminist approach to tourism

development. Such an approach helps reveal how women are frequently overlooked in programs aimed at improving the quality of life in tourist destinations.

In the context of tourism, this study aligns with previous research indicating that efforts toward sustainable tourism often disproportionately benefit men (Ferguson & Alarcon, 2015) while significantly impacting the everyday lives of women (Tucker, 2022).

Eger, Munar, and Hsu (2023) argue that for broader systemic change, sustainability analyses must address the complex interplay between gender and tourism, particularly concerning waste management. Considering the significant role of women's environmental care work, we support Camargo et al. (2016), who advocate for rethinking sustainability through an embodied perspective that includes emotions, feelings, and the ethics of care. Furthermore, we agree with Alarcón and Cole (2021) that achieving sustainable tourism is impossible without gender equity.

The disproportionate burden placed on the community brought by the neoliberal waste management approach, particularly on women, to manage waste and maintain environmental cleanliness underscores broader issues of environmental justice. Care work is reproductive work, and our research findings show that women's care work becomes essential for social and planetary survival (Kalish and Cole, 2023). While care work should be valued, it should not perpetuate inequity. Liboiron (2021) calls for reproductive justice, which involves the struggle for the collective conditions necessary for sustaining life and persisting over time amid life-negating structural forces. This struggle is inseparable from environmental justice and anticolonialism, which in this article, are compromised by the capitalist hospitality industry and the state that allows the accumulation of waste.

Conclusion

In conclusion, examining Lombok Island's waste management through the concept of care from the Feminist Political Ecology (FPE) reveals how gender dynamics significantly affect environmental sustainability and tourism development. Gender dynamics deeply influence environmental management, yet Lombok's governance often overlooks this, despite women's roles in environmental initiatives. Local government priorities, favoring tourism over holistic waste strategies, starkly contrast with gendered grassroots activism focused on waste reduction and revalorization, where women's contributions are undervalued. The government's emphasis on tourism-driven growth, neglecting environmental education and interventions, disconnects from the gendered realities of waste management. A gender-equitable approach to waste management is essential for sustainable solutions and empowering women, requiring a shift in government priorities towards inclusive environmental governance. We recommend that this shift should involve investing in long-term, sustainable waste management solutions that empower local communities, particularly women, and address the environmental justice concerns arising from tourism and waste accumulation.

Declaration of Ownership

This article is our original work.

Conflict of Interest

There is no conflict of interest to declare in this article.

Ethical Clearance

This study was approved by the institution.

References

- Agamuthu, P., & Herat, S. (2014). Sustainable waste management in Small Island Developing States (SIDS). *Waste Management & Research*, 32(8), 681–682. <https://doi.org/10.1177/0734242X14544869>
- Andréfouët, S., Paul, M., & Farhan, A. R. (2022). Indonesia's 13558 islands: A new census from space and a first step towards a One Map for Small Islands Policy. *Marine Policy*, 135, 104848. <https://doi.org/10.1016/j.marpol.2021.104848>
- Antara News. (2023, September 12). *Pariwisata dongkrak pertumbuhan ekonomi NTB hingga capai 7,10 persen*. Antara News. <https://www.antaraneews.com/berita/3231001/pariwisata-dongkrak-pertumbuhan-ekonomi-ntb-hingga-capai-710-persen>
- Badan Pusat Statistik Kabupaten Lombok Utara. (2024). *Jumlah akomodasi, kamar, dan tempat tidur yang tersedia pada hotel bintang di Kabupaten Lombok Utara*. Badan Pusat Statistik. <https://lombokutarakab.bps.go.id/id/statistics-table?subject=561>
- Buechler S. (2016). Gendered vulnerabilities and grassroots adaptation initiatives in home gardens and small orchards in Northwest Mexico. *Ambio*, 45(Suppl 3), 322–334. <https://doi.org/10.1007/s13280-016-0832-3>
- Buechler, S., & Hanson, A. M. S. (Eds.). (2015). *A political ecology of women, water and global environmental change* (p. 99). Routledge.
- Camargo, B. A., Jamal, T., & Wilson, E. (2016). Toward a critical ecofeminist research paradigm for sustainable tourism. In J. Hill, T. Jamal, & D. Dredge (Eds.),

- Tourism research paradigms: Critical and emergent knowledges* (Vol. 22, pp. 73–85). Emerald Group Publishing. <https://doi.org/10.1108/S1571-504320150000022011>
- Daby, D. (2003). Effects of seagrass bed removal for tourism purposes in a Mauritian bay. *Environmental Pollution*, 125(3), 313–324. [https://doi.org/10.1016/S0269-7491\(03\)00125-8](https://doi.org/10.1016/S0269-7491(03)00125-8)
- Dewi, O. C., Vidyaningrum, W., Kusmiati, C. Y., & Munksgaard, R. (2022). *Pre-feasibility study (waste) of Lombok*. Danish Environmental Protection Agency (DEPA).
- Eger, C., Munar, A. M., & Hsu, C. H. C. (2023). *Gender and tourism sustainability*. Routledge. <https://doi.org/10.4324/9781003329541>
- Elmhirst, R. (2011). Introducing new feminist political ecologies. *Geoforum*, 42(2), 129–132. <https://doi.org/10.1016/j.geoforum.2011.01.006>
- Ferguson, L., & Alarcon, D. M. (2015). Gender and sustainable tourism: Reflections on theory and practice. *Journal of Sustainable Tourism*, 23(3), 401–416. <https://doi.org/10.1080/09669582.2014.957208>
- Ferronato, N., Rada, E. C., Portillo, M. A. G., Cioca, L. I., Ragazzi, M., & Torretta, V. (2019). Introduction of the circular economy within developing regions: A comparative analysis of advantages and opportunities for waste valorization. *Journal of Environmental Management*, 230, 366–378. <https://doi.org/10.1016/j.jenvman.2018.09.095>
- Firdaus, M., Trihadiningrum, Y., & Lestari, P. (2020). Microplastic pollution in the sediment of Jagir estuary, Surabaya City, Indonesia. *Marine Pollution Bulletin*, 150, 110790. <https://doi.org/10.1016/j.marpolbul.2019.110790>
- Fuldauer, L. I., Ives, M. C., Adshead, D., Thacker, S., & Hall, J. W. (2019). Participatory planning of the future of waste management in small island developing states to deliver on the Sustainable Development Goals. *Journal of Cleaner Production*, 223, 147–162. <https://doi.org/10.1016/j.jclepro.2019.02.269>
- Gómez, M., Voss, A. K., & Farrelly, E. (2023). Meanings and practices of care in feminist political ecology: An intergenerational conversation with Khayaat Fakier and Wendy Harcourt. In *Contours of feminist political ecology* (pp. 155–176). https://doi.org/10.1007/978-3-031-20928-4_7
- Hakim, L., Asmara, A. A., Priambodo, R. Y., & Wong, Y. J. (2023). Microplastic pollution profile in the Indian Ocean of the Southern Java Island, Indonesia. *Environmental Challenges*, 13, 100786. <https://doi.org/10.1016/j.envc.2023.100786>
- Hampton, M. P., & Jeyacheya, J. (2015). Power, ownership and tourism in small islands: Evidence from Indonesia. *World Development*, 70, 481–495. <https://doi.org/10.1016/j.worlddev.2014.12.007>
- Indonesian Government. (2011). *Government regulation number 50 of 2011 on National Tourism Development Master Plan*. Government of Indonesia.
- Kalisch, A. B., & Cole, S. (2023). Gender justice in global tourism: Exploring tourism transformation through the lens of feminist alternative economics. *Journal of Sustainable Tourism*, 31(12), 2698–2715. <https://doi.org/10.1080/09669582.2022.2108819>
- Kurniawan, F., Adrianto, L., Bengen, D. G., & Prasetyo, L. B. (2016). Vulnerability assessment of small islands to tourism: The case of the Marine Tourism Park of the Gili Matra Islands, Indonesia. *Global Ecology and Conservation*, 6, 308–326. <https://doi.org/10.1016/j.gecco.2016.04.001>
- Liboiron, M. (2021). *Pollution is colonialism*. Duke University Press. <https://doi.org/10.1002/lob.10619>
- Liboiron, M., Tironi, M., & Calvillo, N. (2018). Toxic politics: Acting in a permanently polluted world. *Social*

- Studies of Science*, 48(3), 331–349. <https://doi.org/10.1177/030631271878308>
- McCright, A. M., & Xiao, C. (2014). Gender and environmental concern: Insights from recent work and for future research. *Society & Natural Resources*, 27(10), 1109–1113. <https://doi.org/10.1080/08941920.2014.918235>
- Mohee, R., Mauthoor, S., Bundhoo, Z. M. A., Somaroo, G., Soobhany, N., & Gunasee, S. (2015). Current status of solid waste management in small island developing states: A review. *Waste Management*, 43, 539–549. <https://doi.org/10.1016/j.wasman.2015.06.012>
- Moreno Alarcón, D., & Cole, S. (2021). No sustainability for tourism without gender equality. In K. A. Boluk, C. T. Cavaliere, & F. Higgins-Desbiolles (Eds.), *Activating critical thinking to advance the sustainable development goals in tourism systems* (1st ed., p. 17). Routledge. <https://doi.org/10.1080/09669582.2019.1588283>
- Pakasi, D. T., Hardon, A., Hidayana, I. M., & Rahmadhani, P. (2024). Gendered community-based waste management and the feminization of environmental responsibility in Greater Jakarta, Indonesia. *Gender, Technology and Development*, 28(2), 205–222. <https://doi.org/10.1080/09718524.2023.2300561>
- Pathak, G., Nichter, M., Hardon, A., Moyer, E., Latkar, A., Simbaya, J., Pakasi, D., Taqueban, M., & Love, J. (2023). Plastic pollution and the open burning of plastic wastes. *Global Environmental Change*, 80, 102648. <https://doi.org/10.1016/j.gloenvcha.2023.102648>
- Purba, L. A. H., & Erliyana, A. (2020, March). Legal framework of waste management in Indonesia. In *International Conference on Law, Governance and Islamic Society (ICOLGIS 2019)* (pp. 104-108). Atlantis Press. <https://doi.org/10.2991/assehr.k.200306.191>
- Rocheleau, D., & Roth, R. (2007). Rooted networks, relational webs and powers of connection: Rethinking human and political ecologies. *Geoforum*, 38(3), 433–437. <https://doi.org/10.1016/j.geoforum.2006.10.003>
- Rocheleau, D., Thomas-Slayter, B., & Wangari, E. (Eds.). (1996). *Feminist political ecology: Global issues and local experience* (1st ed.). Routledge. <https://doi.org/10.4324/9780203352205>
- Scheinberg, A., Muller, M., & Tasheva, E. L. (1999). *Gender and waste: Integrating gender into community waste management: Project management insights and tips*. Urban Waste Expertise Programme (UWEP) Working Document, 12.
- Sekito, T., Dote, Y., & Hindarman, R. R. (2019). Solid waste flow and composition determination for sustainable waste management in Gili Trawangan, Indonesia. *SN Applied Sciences*, 1(11), 1373–1388. <https://doi.org/10.1007/s42452-019-1369-4>
- Shamshiry, E., Nadi, B., Mokhtar, M. B., Komoo, I., Hashim, H. S., & Yahaya, N. (2011). Integrated models for solid waste management in tourism regions: Langkawi Island, Malaysia. *Journal of Environmental and Public Health*, 2011. <https://doi.org/10.1155/2011/709549>
- Tallei, T. E. (2013). Local community-based initiatives of waste management activities on Bunaken Island in North Sulawesi. *Research Journal of Environmental and Earth Sciences*, 5(12), 737–743. <http://dx.doi.org/10.19026/rjees.5.5730>
- Tucker, H. (2022). Gendering sustainability's contradictions: Between change and continuity. *Journal of Sustainable Tourism*, 22(8), 1–18. <https://doi.org/10.1080/09669582.2020.1839902>
- Utami, D. A., Reuning, L., Schwark, L., Friedrichs, G., Dittmer, L., Nurhidayati, A. U., Fauzan, A. A., & Cahyarini, S. Y. (2023). Plastiglomerates from uncontrolled burning of plastic waste on Indonesian beaches contain high contents of organic pollutants. *Scientific Reports*, 13(1), 10383. <https://doi.org/10.1038/>

- Wang, K. C. M., Lee, K. E., & Mokhtar, M. (2021). Solid waste management in small tourism islands: An evolutionary governance approach. *Sustainability*, 13(11), 5896. <https://doi.org/10.3390/su13115896>
- Wilde, M. D., & Parry, S. (2022). Feminised concern or feminist care? Reclaiming gender normativities in zero waste living. *The Sociological Review*, 70(3), 526–546. <https://doi.org/10.1177/00380261221080110>
- Wilkinson, P. F., & Pratiwi, W. (1995). Gender and tourism in an Indonesian village. *Annals of Tourism Research*, 22(2), 283–299. [https://doi.org/10.1016/0160-7383\(94\)00077-8](https://doi.org/10.1016/0160-7383(94)00077-8)
- Willmott, L., & Graci, S. R. (2012). Solid waste management in small island destinations: A case study of Gili Trawangan, Indonesia. *Téoros*, 71–76. <https://doi.org/10.7202/1036566ar>