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RECONSTRUCTING ENVIRONMENTAL ETHICS THROUGH FGD: A CASE STUDY OF RIVER CONSERVATION AND LOCAL MYTHS DEMYSTIFICATION IN PAKIS KEMBAR

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Anggun Trisnanto Hari Susilo[1]
[1]Department of International Relations, Brawijaya University, Indonesia
Corresponding author: Anggun Trisnanto Hari Susilo
E-mail: a.trisnanto@ub.ac.id

Abstract:
This study examines the reconstruction of environmental ethics in Pakis Kembar Village through Focus Group Discussion (FGD) within the framework of Participatory Action Research (PAR). The background of the study focuses on the high level of domestic waste accumulation and the practice of dumping waste into rivers, influenced by local myths, namely, throwing baby diapers into rivers. This study conducted an FGD on November 5, 2025, using a PAR approach involving local governments, religious leaders, local communities, academics, practitioners, and the private sector to explore the roots of socio-cultural problems and formulate community-based solutions. The results of the study indicate that waste management problems are not only caused by limited infrastructure, but also by mental models and local knowledge systems (indigenous knowledge systems). Through inter-epistemological dialogue, FGD effectively facilitates the process of demystifying local myths, building collective awareness, identifying local champions, and producing the compilation master plan eco edu tourism, a river conservation roadmap that integrates environmental education, value change, and technical interventions. However, the implementation of this initiative still faces challenges, such as the need for long-term mentoring, strengthening women's representation, and implementing technical ideas into real-world practice. Based on these results, this study recommends strategies for value-based intervention, integration of practice-based environmental education, and strengthening cross-regional networks to support upstream and downstream conservation.

Keywords: Focus Group Discussion (FGD), Participatory Action Research (PAR), Waste Management, Local Myths

INTRODUCTION

Waste is one of the biggest environmental problems facing the world today. Generally, waste can be defined as the remains of human activities that are no longer used or discarded, encompassing various types, from organic and inorganic waste to hazardous and toxic materials. In the context of sustainable development, the waste issue is not only related to cleanliness and aesthetics, but also has a direct impact on public health, environmental degradation, and climate change. Improperly managed waste disposal can pollute soil and water, produce greenhouse gas emissions such as methane from the decomposition of organic waste, and exacerbate plastic pollution on land and at sea (BSKDN, 2025). Therefore, waste management is a crucial issue on the global agenda to achieve Sustainable Development Goals (SDGs), especially goal 11 on sustainable cities and goal 12 on responsible consumption and production (UNDP, 2025).

According to the latest report fromUnited Nations Environment Programme (UNEP), stockpile production of municipal solid waste (MSW), or municipal solid waste, will continue to increase significantly globally in 2020, 2030, 2040, and even 2050 if no further action is taken in its management. This data can be seen in the graph below.

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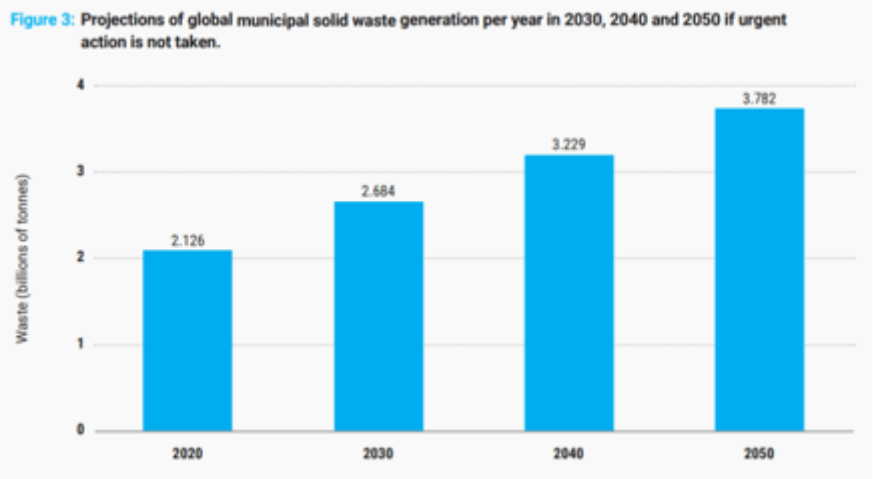

Source: United Nations Environment Program (UNEP)

Figure 1. Projected global municipal solid waste production from 2020 to 2050 if no urgent action is taken

In 2020, the global waste generation reached approximately 2.126 billion tons. This figure is expected to increase to 2.684 billion tons by 2030, representing an increase of nearly 560 million tons in just one decade. This upward trend will continue in 2040, with the total generation estimated at 3.229 billion tons, an increase of more than 1.1 billion tons compared to 2020. The most dramatic increase will occur in 2050, estimated at 3.782 billion tons per year, nearly double the 2020 production level. In addition to the increasing volume, the state of global waste management is also concerning. More than 60% of the world's waste is still disposed of in open landfills without adequate management, and only about 19% is recycled or composted (UNEP, 2024). These data indicate that most countries, especially low- and middle-income countries, still struggle to overcome infrastructure and financial constraints for sustainable waste management. This gap indicates an imbalance in waste management between countries, which could ultimately exacerbate global environmental injustice.

At the national level, Indonesia has one of the highest waste accumulations in Southeast Asia. According to official data from the National Waste Management Information System of the Ministry of Environment and Forestry (KLHK), the total waste accumulation in Indonesia will reach approximately 36.8 million tons per year by 2024 (SIPSN, 2024). Of this amount, approximately 32.36% is effectively managed through collection, processing, and recycling, while the remaining 67.64% remains unmanaged and has the potential to pollute the environment (SIPSN, 2024). The high level of unmanaged waste indicates that the current waste infrastructure capacity is still inadequate. The main problem in waste management in Indonesia is not only the large volume but also the system and community behavior. Most regions still rely on open landfills (TPA), which often cause environmental problems such as groundwater pollution, unpleasant odors, and methane gas emissions. To date, only a few TPAs in Indonesia have implemented this system of sanitary landfill, such as the Talang Gulo landfill in Jambi, the Tanjung Harapan landfill in North Kalimantan, the Piyungan landfill in Yogyakarta, the Truik landfill in Central Lombok, and the Deliserdang landfill in North Sumatra (Universal Eco, 2025). This condition shows that the challenges of waste management in Indonesia are not only at the national level, but also at the regional level, one of which is Pakis Kembar Village.

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Pakis Kembar Village is a village located in Pakis District, Malang Regency. This village has an area of approximately 331.10 hectares with a population of 9,545 people spread across four hamlets, namely West Krajan, East Krajan, Tegal Pasang, and Jambon. From the socio-economic field, Pakis Kembar is known as a center of the tofu industry, and its location close to Pakis Market makes it a village with high trade activity. In addition, this village also has a number of leading sectors, both in the economic field, such as the "Istana Bordir" Textile Industry Center, the Tegalpasangan Tofu Industry Center, and the Azzam Cracker Production House, as well as in the tourism sector, such as the "Sejahtera Bersama" Fishing Tourism, the Mbah Mangku Jati Tomb Religious Tourism, and the Sumber Kletak Nature Tourism. As a result of high population density and activity, it indirectly causes a high accumulation of domestic waste in this area. Waste generated in Pakis Kembar Village generally comes from two main sources: households and household industries. Household waste is dominated by organic waste, such as food scraps and leaves, while inorganic waste, such as plastic packaging, plastic bags, beverage bottles, paper, and cardboard, is also found in large quantities due to people's consumption patterns and trade activities. Meanwhile, the existence of home-based tofu industries produces solid and liquid waste that, if not managed properly, can damage the environment. In some areas, residual waste, such as disposable diapers, tissues, and non-recyclable waste, also contributes to the daily waste accumulation.

Source: personal documents

Figure 2. pakis kembar canal polluted by tofu waste

The waste problem in Pakis Kembar Village is further complicated by its geographic location, which is crossed by a river. Although the river has the potential to provide water and support economic activity, residents often use it as a final disposal site. This practice of dumping waste into the river has been ongoing for a long time and is difficult to stop without further intervention. Low levels of environmental awareness and literacy mean that residents still view the river as a "simple solution" to reduce waste in their area. In addition to behavioral factors, this problem is also exacerbated by the lack of infrastructure and facilities for waste management and garbage trucks in the village. To date, Pakis Kembar Village lacks an organized waste processing and transportation system, preventing residents from disposing of waste properly. The absence of a Temporary Waste Disposal Site, inconsistent waste collection, and a lack of waste sorting facilities at the source make it difficult for residents to manage their own waste. Furthermore, community knowledge and skills

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regarding waste sorting, composting, or recycling are still limited, resulting in waste being disposed of directly without prior processing.

When examined through the lens of internal individual factors, a distinct pattern emerges that serves as a driving force behind community practices of disposing waste and refuse into primary rivers' drainage channels. As a rural area, it is unsurprising that the majority of the population retains a conservative mindset strongly shaped by cultural elements and local beliefs. These factors play a significant role in shaping how rural communities articulate their local beliefs through everyday practices. In relation to the case of waste accumulation in Pakis Kembar Village, Malang Regency, it can be indirectly observed that local belief systems or myths contribute to influencing community habits that treat drainage channels as final disposal sites. One of the most commonly encountered myths in Java, particularly in conservative rural areas, concerns the "recommendation" to dispose of baby diapers in drainage channels. This local myth instills a belief regarding the proper way to discard used baby diapers.

Many conservative rural communities continue to hold the view that burning diapers or disposing of them with regular household waste is taboo, as circulating myths associate these practices with negative consequences for infants' health. Burning diapers or discarding them in certain locations is believed to bring misfortune to babies, such as rashes or other skin ailments. Consequently, communities believe that disposing of diapers in drainage channels will prevent such misfortune and provide peace of mind. This assumption is rooted in the belief that a baby's skin will remain fresh if diaper waste is discarded in water. Furthermore, many villagers still regard drainage channels as 'sacred' spaces inhabited by spiritual beings. These myths and local beliefs influence behavior by encouraging the disposal of diaper waste into drainage channels to obtain "blessings" from the river's sacredness. In addition, some community members adhere to a deviant belief that disposing of waste or human refuse into drainage channels constitutes a way of providing "nutrients" to the river's biota and ecosystem. Such deviant myths are deeply rooted in cultural aspects of Javanese society, which traditionally conceptualizes drainage channels as the "backyard of the house." This expression is interpreted as drainage channels being appropriate final disposal sites for human waste (latrines), as well as sources of "nature's provision" that must be fully utilized even when such practices are environmentally destructive.

The existence of local myths and beliefs within rural communities undeniably has a substantial influence on environmental conservation efforts, particularly in drainage channel areas, which become hindered as these myths become embedded in community practices that are difficult to change once they have taken root as cultural norms. This condition subsequently causes conservation programs to frequently encounter challenges when newly introduced norms fail to penetrate the cultural and belief-based boundaries of local communities. The Indigenous Knowledge System (IKS), as articulated through local beliefs, thus becomes an impediment to the process of sustainable natural resource conservation. Systems preserved in myths, taboos, and traditional beliefs do not guide local communities in managing the environment; instead, they obstruct the development of community mindsets regarding new environmental conservation ideas. As a result, conservation programs are often perceived as incompatible with local beliefs and practices, ultimately leading to their abandonment.

Community resistance toward the adoption of modern conservation norms or ideas is strongly influenced by the inflexibility of these local myths. For example, the previously discussed myth regarding the disposal of baby diapers into drainage channels reflects a rigid interpretation that is difficult to adapt to changing environmental conditions. Local myths that dictate specific practices that are no longer aligned with current ecological realities have become one of the primary obstacles

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to adaptive management and conservation efforts, particularly in rural administrative areas with conservative populations. As these deeply rooted myths foster strong adherence, they effectively hinder communities from adopting new conservation practices and instead exacerbate contemporary environmental problems. This assumption is further supported by anthropological and public health studies, which demonstrate that sacred beliefs within populations with low educational attainment and conservative orientations (such as rural communities) influence individuals to overlook the risks of environmental pollution due to the assimilation of religio-cultural elements that shape risk perception. Consequently, communities tend to maintain destructive local myths rather than adopt constructive conservation efforts.

Although the contradiction between local myths and current ecological conditions is increasingly evident, rural communities remain seemingly indifferent and resistant to environmental conservation initiatives, particularly drainage channel conservation. Even as drainage channel conditions deteriorate, communities still fail to exhibit sustainable behavioral change to cease the disposal of unmanaged waste into drainage channel areas. The practice of discarding waste, especially inorganic or plastic waste, into drainage flows does not accelerate decomposition. Such misperceptions ultimately generate negative impacts on river ecosystems and conservation efforts. Among the resulting consequences, in addition to drainage flow obstruction, are the accumulation of microplastics that can enter the food chain through aquatic organisms and the occurrence of eutrophication (algal blooms), which reduces oxygen saturation in drinking water sources and poses ecological and human health risks. With regards to this problem, this research offers a 'non-traditional' approach to address it. By definition, non-traditional points to a series of alternatives intervention that are normally taken in waste management.

METHODS

This research uses a qualitative method in the form of Participatory Action Research (PAR) as its main approach. Participatory Action Research (PAR) is a research method that actively involves stakeholders in examining ongoing problems by using their own experiences as the basis for analysis to encourage change and improvement (Afandi, 2020). PAR was chosen because it can position the community as both a subject and an active actor in the process of problem identification, action planning, and reflection on results (Kemmis & McTaggart, 2005). This approach is relevant for community service-based research, as it emphasizes direct community involvement, strengthening local capacity, and collaboration between researchers and the community to produce practical knowledge oriented towards social change (Kemmis & McTaggart, 2005). PAR is implemented through Focus Group Discussion (FGD) as the main data collection method. Focus Group Discussion (FGD) is a systematic and focused group discussion conducted to discuss a specific issue in an informal setting, guided by a moderator. This FGD took place on Wednesday, November 5, 2025, in Pakis Kembar Village, Malang Regency, involving local sanitation stakeholders, village representatives, local communities, community leaders, and private parties involved in sanitation management. This activity is expected to explore the experiences and needs of the community, identify the sanitation challenges they face, and formulate alternative solutions in a participatory manner.

RESULT AND DISCUSSION

Focus Group Discussion (FGD) "Towards Pakis Kembar Village as an Independent Waste and Garbage Eco-Education Area in Pakiskembar Village". The activity Focus Group Discussion (FGD) "Towards Pakis Kembar Village as an Independent Waste and Garbage Eco-Education Area

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in Pakiskembar Village, Malang Regency, held on November 5, 2025, at the Lorong Ijo Pakem Basecamp, Tegal Pasangan, Pakiskembar Village, Malang Regency, became a forum for interaction that demonstrated that environmental problems in Pakis Kembar Village are not solely related to waste, rivers, or technical aspects of their management, but are rooted in the views, habits, and social dynamics of the community. The discussion, which presented representatives of various actors, both from the Malang Regency Government, local communities, community leaders, academics, and practitioners, made this FGD a meeting place for knowledge, experience, and cultural values. This FGD not only became a forum for exchanging information, but also an arena for analyzing how each actor views environmental problems from their own perspective.

Source: personal documents

Figure 3. Atmosphere on the implementation of activities, focus group discussion (FGD)

One of the most prominent topics of discussion was the culture of throwing waste into rivers. Representatives from the East Java Provincial Public Works and Water Resources Agency stated that most people still view rivers as their "backyard," an open space deemed suitable for disposing of various types of waste, from domestic waste to baby diapers. This view has become part of the community's social construct and has been passed down through generations. As a result, technical interventions are ineffective because the main problem lies not with the availability of infrastructure, but rather with the community's perception of the river itself. Then, representatives from the Malang Regency Environmental Agency highlighted the issue of baby diapers, a type of toxic waste that requires special attention because they contain chemicals that are difficult to decompose and are mixed with feces and urine that contain pathogens, thus potentially contaminating soil and water if not handled properly. However, the cultural belief that baby diapers should be disposed of in running water because they make babies feel "fresh" results in this practice persisting despite the availability of containers for baby diaper waste. Ironically, these containers are often used to collect other types of waste. This situation further reinforces the notion that waste management issues cannot be viewed solely as technical issues, but rather are related to community beliefs and habits. Beyond domestic issues, the FGD also revealed significant impacts from upstream activities. During the rainy season, animal waste from the Jabung area is dumped downstream, resulting in river pollution in Pakis Kembar. Representatives from the Jabung Community Empowerment Group explained that the lack of an animal waste management system leads to river water pollution, which ultimately impacts the success of fish farming in Pakis Kembar. It demonstrates that environmental issues are not isolated to a single region and require a coordinated approach across upstream and downstream villages.

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Source: personal documents

Figure 4. Implementation of activities, a focus group discussion (FGD) session for participants to share their views.

The discussion then turned to the issue of changing community behavior, considered the primary foundation for environmental improvement. Representatives from the Proklim Foundation emphasized that behavioral change cannot be achieved partially or targeted only at certain groups. It is more effective if it involves all levels of society, from village heads, village officials, environmental cadres, to those who interact directly with the river. Approaches to behavioral change must consider simple daily habits, as small things often contribute significantly to pollution. Meanwhile, representatives from Jabung highlighted the strategic role of religious leaders in raising environmental awareness. Given their social standing, these religious leaders can convey environmental messages through lectures, sermons, or other religious activities, making them more easily accepted by the community. Several participants even provided examples of how simple religious advice is often more effective in influencing societal change than formal government action. This perspective demonstrates that a spiritually-based approach can be an alternative to encourage behavioral change in communities to protect their environment. Next, representatives from Diponegoro Tumpang High School shared their experiences related to river tracing activities and the routine Friday cleanups they conduct with their students. They believe that children are known to have keen observation, a strong sense of curiosity, and a tendency to imitate positive behavior. Providing hands-on river experiences can instill environmental values from an early age and develop them into long-term habits. It raises awareness of how schools can serve as centers for environmental education that encourage intergenerational behavioral change.

Beyond the social and behavioral aspects, the FGD also raised several technical ideas that the community could implement. Several participants proposed the use of biopores to reduce organic waste and increase soil absorption. Other suggestions included the use of animal manure mixed with eco-enzymes to produce organic liquid fertilizer, and tree planting along riverbanks was also proposed as a long-term conservation strategy to maintain the stability of the river ecosystem. However, all participants agreed that these technical innovations would not have an impact without a shift in community perspectives. Overall, the FGD demonstrated that environmental issues in Pakis Kembar are multidimensional, encompassing not only issues related to waste or river quality, but also how the community understands its living space, how relationships between actors are formed, how cultural values influence actions, and how education can shape a more environmentally conscious generation. These discussions not only identified problems but also opened up opportunities for collaboration between actors as a foundation for collective change.

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Ultimately, the FGD became a space where new understandings were created, collective awareness grew, and initial commitments to improving the environment began to emerge.

Implications of the FGD for River Conservation Efforts and the Demystification of Local Myths. The implementation of the Focus Group Discussion (FGD) in Pakis Kembar Village represents a critical turning point in efforts to manage household waste and restore the river ecosystem, which in recent years has experienced significant degradation. More than merely a public consultation forum, the FGD evolved into a multidimensional dialectical arena that brought together scientific epistemology and local epistemology, government perspectives and community worldviews (glocalization), as well as rational-empirical arguments and cultural-spiritual beliefs. Through these dynamics, the FGD fulfilled a strategic function as a catalyst for cognitive, cultural, and practical transformation within the broader framework of community-based conservation. Substantively, the central and most fundamental problem in river management in Pakis Kembar does not lie in the lack of waste-management infrastructure or limited technical facilities alone, but rather in the persistence of a collective mental model transmitted across generations. This mental model is constructed, reinforced, and reproduced through what can be understood as an Indigenous Knowledge System (IKS)-a system of local knowledge that not only provides meaning to natural phenomena but also prescribes normative behavioral rules for the community. In the context of Pakis Kembar, one of the most influential myths is the belief surrounding suleten, or infant skin rashes. The community believes that babies will be protected from skin diseases if their diapers are disposed of in the river or a flowing body of water. According to this belief, water contains cooling and healing properties ("sejuk") that symbolically safeguard the infant's health.

This myth has deep cosmological roots in Javanese tradition, in which water is regarded as a neutral yet sacred medium, a carrier of purity, balance, and cleansing from negative attributes. However, the current ecological context has changed drastically, rendering such IKS no longer aligned or ecologically relevant. The river is no longer a pristine body of water as envisioned within classical cosmology; it has been contaminated by domestic waste, livestock effluent, and various inorganic pollutants. Here, the dislocation of meaning becomes apparent: what was once an adaptive cultural practice has become ecologically destructive. This dislocation came into view when the community was confronted with contemporary ecological realities through deliberative processes during the FGD. The FGD served as the primary medium for an epistemic confrontation-the meeting of local knowledge with scientific facts. Representatives from the Environmental Agency of Malang Regency, for instance, presented the chemical composition of modern diapers, which consist of superabsorbent polymers, polyethylene plastic layers, and fecal residues containing dangerous pathogens such as E. coli and Salmonella. Technical explanations regarding the non-biodegradable nature of diapers, the ability of polymers to absorb hundreds of times their weight in liquid, and their potential to cause blockages and eutrophication provided new perspectives previously unknown to the community when residents were confronted with evidence showing that a river contaminated by diapers could in turn pollute the groundwater that serves as their drinking source, this indirectly unsettled long-held beliefs and triggered cognitive dissonance (Festinger, 1957).

According to behavioral change theory, such cognitive dissonance plays a pivotal role in prompting individuals to re-evaluate their beliefs. Community members began questioning the assumption that infant diapers must be disposed of in the river. They realized that the magical belief they once perceived as protective in fact entailed severe ecological and health risks. The FGD thus created a safe space for community members to express confusion, doubt, and concern regarding shifts in cultural values—without imposing new norms coercively, but rather through equitable and

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dialogical meaning negotiation. Beyond facilitating the dismantling of diaper-related myths that hinder river conservation efforts, the FGD also opened discursive space to re-examine the sacredness of rivers within Javanese cosmology. Water in Javanese tradition occupies a central place as a purifying, stabilizing, and life-connecting element. However, this notion of sacredness had often been narrowed into a justification for disposing of domestic waste into the river. Within the FGD discussions, religious and cultural leaders played a pivotal role in correcting this narrow interpretation by redefining the idea of "honoring the river." They emphasized that respecting the river does not mean "returning" waste to nature, but rather preserving its cleanliness so that it may continue to sustain life. This viewpoint was further strengthened by religious arguments asserting that water is a source of thaharah (purification), and that polluting it is morally reprehensible. Such transformations demonstrate that ecological value change becomes more effective when grounded in symbolic authority and moral doctrine respected by the community.

This reinterpretation of myths and cultural values constitutes the core of the demystification process. In anthropological literature, demystification does not imply erasing culture, but rather restoring cultural meaning to an ecologically relevant context (Douglas, 1966; Geertz, 1973). Through demystification, the community learns that culture is dynamic and adaptable to environmental change. Thus, local myths need not be destructive; instead, they can be reshaped into adaptive and even constructive forms. Whereas the river was once perceived as a medium to neutralize illness, the community can now understand that it is a clean river—not a polluted one—that can optimally fulfill ecological and spiritual functions. The FGD also expanded public awareness by revealing that river issues cannot be separated from upstream–downstream dynamics. Presentations from POKDANG representatives in Jabung regarding livestock waste carried downstream during the rainy season broadened the community's understanding that pollution is not solely a result of local behavior but part of a larger socio-ecological system. This narrative enriched the demystification process by dismantling deterministic assumptions such as "the river can clean itself." Although spiritually evocative, this belief is no longer relevant in the face of escalating modern pollution. UNEP (2024) data show that rural rivers in developing regions are losing their natural purification capacity due to excessive nutrient loads and microplastic contamination. Such information undermines older beliefs and fosters a collective sense of urgency to improve river management. From a socio-practical standpoint, the FGD shifted the conservation paradigm from a state-centric model, relying predominantly on government action, to a more adaptive community-based conservation model. FGD discussions revealed that technical interventions such as waste sorting stations, diaper containers, or periodic river clean-ups will be ineffective if they fail to address the cultural roots of behavior, namely the myths shaping community practice. A purely top-down approach cannot penetrate the community's deep-seated belief structures, aligning with studies by the World Bank (2018) showing that environmental infrastructure often fails when not accompanied by behavioral change strategies.

The FGD addressed this issue by deploying value-based interventions that draw not only on ecological data but also on the emotional, moral, and spiritual dimensions of community life. For instance, when religious leaders emphasized that polluting the river harms not only the environment but also communal well-being and spiritual harmony, such arguments proved more compelling than technical instructions alone. Identification of key actors or local champions became a crucial outcome of the FGD. Local champions—such as POKDANG members, environmental cadres, teachers, and notably educators from SMA Diponegoro Tumpang—played the role of cultural intermediaries capable of translating technocratic environmental messages into culturally resonant practices through glocalization strategies. The involvement of youth scouting groups in

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river monitoring activities helped foster ecological sensitivity among younger generations, thereby ensuring that destructive myths would be disrupted through direct environmental education. At the community level, the FGD also generated a new mechanism of "collective shame" associated with dumping waste in the river. When residents understood that their actions negatively affected other communities downstream and compromised the village's prospects for eco-edutourism development, this heightened awareness triggered a shift in social norms. Former norms that were permissive toward waste disposal became redefined as socially unacceptable behaviors detrimental to the village's environmental reputation. Such mechanisms of social control based on collective shame are foundational for sustaining long-term behavioral change. Another significant contribution of the FGD was the establishment of an integrated conservation roadmap. This roadmap encompasses not only technical programs but also value transformation, cultural reframing, educational reinforcement, and collaborative management across administrative boundaries. One of the most innovative elements is the development of a "substitution myth" within the demystification framework, specifically, the practice of rinsing diapers before disposing of them in designated waste facilities. This new practice does not eliminate the cultural symbolism attached to infant diapers but modifies it to align with ecological principles. Such an approach can be described as cultural reframing, a form of social engineering that respects local values while redirecting them toward environmentally adaptive outcomes.

Additionally, integrating river-based learning activities-such as susur sungai (river trekking)-into the local school curriculum strengthens program sustainability. Children who routinely engage with the river ecosystem become not only environmental ambassadors within their households but also a new generation with emotional and ecological bonds to the river. Such integration reflects global models of environmental stewardship education. Ultimately, the FGD in Pakis Kembar demonstrates the effectiveness of the Participatory Action Research (PAR) approach, which positions the community as subjects rather than mere beneficiaries. PAR fosters spaces for collective reflection, joint action, and continuous evaluation (Kemmis & McTaggart, 2005). The FGD did not merely identify problems; it enabled the community to assume ownership over both the problems and the solutions. This process ensures that the transformation taking place is neither superficial nor temporary, but anchored in shared understanding, value reorientation, and collective commitment.

In conclusion, the FGD in Pakis Kembar demonstrates that conservation in culturally rich communities can only succeed through approaches that respect local knowledge, facilitate dialogue between epistemologies, and reformulate cultural values to match contemporary ecological conditions. Demystification does not equate to cultural erasure; rather, it liberates communities from destructive practices without stripping them of their identity. Through the FGD, the people of Pakis Kembar have begun constructing a new environmental ethic-one grounded not only in scientific knowledge but also in values, spirituality, and collective responsibility.

Achievements and Evaluation of Activities. The implementation of the Focus Group Discussion (FGD) titled "Towards Pakis Kembar Village as an Eco-Edutourism Area with Independent Waste and Wastewater Management", held on 5 November 2025 at the Lorong Ijo Pakem basecamp in Tegal Pasang Hamlet, Pakis Kembar Village, Malang Regency, provides a clear illustration of the effectiveness of the discussion process in uncovering environmental issues in Pakis Kembar. The forum produced a set of strategic outcomes with both direct and indirect implications for river conservation efforts and the development of the village as a potential eco-edutourism destination. These outcomes are not merely discussion outputs; rather, they represent substantive transformations emerging from interactions among stakeholders, epistemic confrontations between scientific knowledge and local belief systems, and the convergence of interests that previously

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operated in isolation. Within this framework, the FGD played a multidimensional role: it served as a deliberative space, an arena for negotiating meaning, a platform for consensus building, and an instrument for ecological planning at the village level. One of the most notable achievements was the formulation of the Pakis Kembar Eco-Edutourism Master Plan, a strategic document that establishes a long-term planning foundation to position the river and its surrounding environment as the central locus of ecological education and conservation efforts. The development of this document demonstrates the success of the FGD in integrating the perspectives of government actors, academics, local communities, and traditional leaders into a coherent and comprehensive development direction. The master plan not only outlines spatial planning for tourism development but also explicitly integrates river conservation as its core pillar. It includes strategies for riverbank revitalization, management of domestic waste, the establishment of educational river-trekking routes, and the creation of ecological learning corridors that connect schools, community groups, and the village's physical environment. Thus, the master plan serves not merely as an administrative product but as a structural instrument that strengthens the village's ecological orientation.

Beyond producing a strategic document, the FGD also succeeded in cultivating collective awareness regarding the urgency of river restoration as an integral component of the community's social and economic well-being. The discussions facilitated encounters between technical knowledge about pollution risks and residents' everyday experiences, creating a space for critical reflection on long-normalized practices. Participants came to understand that river degradation is not only an environmental concern but also a threat to public health, drinking water quality, agricultural sustainability, and the village's tourism potential. This awareness is essential because it forms the psychological basis for behavioral change, especially within a community previously influenced by local myths surrounding the disposal of infant diapers into the river. Through scientific explanations presented by the Environmental Agency and open dialogue with religious leaders, a process of meaning reconstruction occurred, reshaping community perceptions of the river from a space believed to "neutralize" waste into a living entity whose purity must be safeguarded.

Equally significant was the formation of collaborative networks among stakeholders involved in river management. The FGD created a space where village government, environmental communities, youth organizations, schools, and religious leaders could understand one another's roles, capacities, and needs. This collaboration formed a new ecological coalition that functions as a long-term driver of environmental change. The village government demonstrated strengthened political will to issue regulations concerning household waste management and riverbank governance, while community groups such as Lorong Ijo Pakem and POKDANG reinforced their roles as environmental action leaders. At the same time, schools participating in the forum committed to integrating practice-based environmental education, such as river trekking and waste audits, into their local curriculum. Religious leaders, as respected moral authorities, reinterpreted spiritual values related to water cleanliness, thereby providing a strong moral foundation for transforming community behavior.

Though the FGD provided a clear picture of the effectiveness of the discussion process in exploring environmental issues in Pakiskembar and was deemed effective in creating an inclusive dialogue space where participants were able to freely express their views and respond to each other, resulting in a more in-depth mapping of issues, ranging from cultural issues related to waste disposal in rivers and the management of toxic waste such as baby diapers to issues related to river pollution. This process demonstrated that the FGD method is effective in gathering information related to local problems and social dynamics that are not always visible through traditional survey or observation methods. However, there are several challenges that need to be considered. First, the

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discussion tended to broaden due to the many topics raised by participants, requiring the moderator to work harder to maintain focus. Second, although a variety of technical and social ideas emerged, some participants still struggled to envision how to implement them in practice. It demonstrates the need for further mentoring to ensure that the ideas generated are not merely discourse but are actually implemented. Third, the representation of certain groups, such as women and communities living closest to riverbanks, still needs to be strengthened so that their voices are more integrated into the planning process.

Furthermore, this FGD proved effective in gathering crucial information regarding the root causes of environmental problems while building collective awareness of the need for behavioral change. Furthermore, this activity also opened up opportunities for collaboration between actors, particularly the village government, local communities, and educational groups. It can be an important starting point for designing sustainable programs such as environmental education, community-based waste management, and river conservation strategies. Overall, this FGD made an important contribution to a deeper understanding of the socio-ecological conditions of Pakis Kembar Village, although further action, including concrete actions and regular mentoring, is still needed to realize Pakis Kembar Village as a self-sufficient eco-tourism area for waste and waste management.

CONCLUSION

The implementation of the Focus Group Discussion (FGD) in Pakis Kembar Village demonstrates that river conservation efforts and the strengthening of rural socio-ecological systems cannot be separated from cultural dynamics, local knowledge structures, and the institutional capacity of the village. The issue of river pollution, as identified through this activity, is not merely the result of inadequate waste-management infrastructure but is fundamentally shaped by the persistence of local myths and belief systems that inform the community's mental models regarding waste-disposal practices. The belief surrounding suleten, which encourages the disposal of infant diapers into the river, exemplifies how non-adaptive cultural meaning systems can become significant obstacles to environmental conservation efforts. Through the FGD, an epistemic dialectic emerged, bringing scientific knowledge into direct dialogue with local belief systems. The forum successfully disentangled cultural misinterpretations that had long normalized river pollution while simultaneously offering reinterpretations of local values through religious, educational, and ecological lenses. The demystification of myths was not conducted coercively but through knowledge negotiation that respected the community's cultural structures-a strategy that has proven more effective in fostering long-term behavioral change. In this regard, the FGD functioned not only as a venue for public consultation but also as a catalyst for knowledge transformation and an instrument for reconstructing the community's ecological value system.

In addition to cognitive and cultural transformations, the FGD also generated significant instrumental outcomes, most notably the formulation of the Pakis Kembar Eco-Edutourism Master Plan. This document represents a major milestone in the village's long-term planning, positioning the river not merely as a physical element but as the central axis of educational, conservation, and tourism-based economic activities. The preparation of the master plan underscores that river conservation must be integrated into spatial planning systems, environmental education curricula, and community empowerment programs. This achievement demonstrates that deliberative forums such as the FGD can produce strategic outputs when participatory processes are managed inclusively and grounded in the actual needs of the community. Furthermore, the FGD strengthened collaborative networks among key actors—including village government, environmental groups, religious figures, youth organizations, and educational institutions-forming a solid foundation for

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the sustainability of conservation initiatives. It strengthened the ecological coalition, illustrating that successful conservation depends on the presence of local champions and social structures capable of distributing environmental values both horizontally and vertically across the community. Nonetheless, the FGD also revealed several challenges, such as the limited representation of women's groups and the need for long-term facilitation to ensure the durability of behavioral change. These challenges indicate that river conservation is a multilayered process requiring sustained policy support, regular monitoring, and robust institutional backing.

Overall, the FGD in Pakis Kembar Village demonstrates that a conservation approach integrating cultural values, scientific knowledge, and spatial planning can generate deeper and more enduring socio-ecological transformations. Technical interventions alone will not be effective without addressing the cultural roots of environmental behavior, and shifts in values cannot be sustained without adequate structural support. Therefore, the success of river conservation programs depends on a harmonious synergy between ecological revitalization, cultural reconstruction, and institutional strengthening. With the new shared understanding established through the FGD, Pakis Kembar Village holds strong potential to develop into an eco-edutourism area that is not only ecologically vibrant but also socially resilient and culturally sustainable.

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