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The Trend of Social Collaboration as a Transformative Strategy for Environmental Degradation Mitigation in Coastal Villages

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ABSTRACT

This study aims to analyze social collaboration between the community and the government of Tanjung Tiram Village in mitigating environmental degradation, particularly through deliberative forums, collective actions, and educational programs. The research employed a descriptive qualitative method with observation, in-depth interviews, and documentation to explore lived experiences and real practices in the field. The findings reveal that collaboration manifests as a complementary partnership, with the community serving as the primary actor in actions and the government acting as the policy facilitator. Mitigation strategies encompass preventive measures through waste education, rehabilitative actions through reforestation, and adaptive responses via the use of organic fertilizers, emphasizing the importance of socio-ecological synergy. This study is significant as it demonstrates that coastal communities with limited resources are capable of developing a participatory-based mitigation model. Its practical implication lies in the potential replication of this model in other coastal villages, while also contributing to the literature on community-based governance. However, the study is limited to one location with a social focus; therefore, further research is recommended to integrate technical ecological aspects and conduct comparative analyses across different regions.

INTRODUCTION

Environmental degradation in Tanjung Tiram Village reflects a pressing socio-ecological emergency that requires immediate attention. Drastic changes in the ecosystem caused by illegal logging, river pollution, and ineffective waste management threaten both public health and local livelihoods. These conditions arise from low ecological awareness and the limited capacity of the village government in environmental supervision. A concrete example can be seen in the increasing frequency of seasonal floods that damage agricultural land and reduce fishermen's productivity. This social reality indicates that environmental issues are not merely ecological but also social crises that necessitate immediate collaboration between the community and local government.

Recent literature emphasizes that community participation is key to successful environmental mitigation (Shrestha et al., 2020). Studies across Asia reveal that collaboration between citizens and government can effectively reduce ecosystem-based disaster risks. However, most existing research focuses on urban contexts or large-scale flood-prone areas, while studies on resource-limited coastal villages remain scarce. For instance, the UNDRR (2015) highlights the importance of the Sendai Framework for disaster risk reduction, but fails to address micro-level strategies at the village scale. This knowledge gap opens a new avenue for understanding how social collaboration in small villages can serve as a replicable model of mitigation.

This study seeks to fill that gap by providing an empirical analysis of social collaboration between communities and government in mitigating environmental degradation in Tanjung Tiram Village. The objective is crucial because few studies have explored adaptive strategies at the community level, especially within resource-limited rural contexts. For example, community-based waste

management and reforestation initiatives can serve as practical solutions to the weak technical policies of village governments. By pursuing this specific goal, the paper aims to contribute both practically to community empowerment and theoretically to the broader discourse on environmental collaboration.

The main argument of this study is that active collaboration between local communities and village governments can simultaneously reduce environmental degradation and strengthen socio-ecological resilience. This argument is grounded in the premise that synergy between these two actors provides dual strength: the community as direct implementers and the government as policy facilitators. For instance, tree-planting programs and integrated waste management training can only succeed if supported by local regulations that ensure the sustainability of community actions. Therefore, the study hypothesizes that social collaboration plays a significant role in developing effective, contextual, and sustainable environmental mitigation models in coastal villages.

METHODS

Research Design

This study employs a descriptive qualitative design, which is appropriate for exploring complex and contextual social phenomena. The design allows the researcher to understand deeply how social collaboration between communities and government operates without reducing variables to quantitative measures. The process involves data collection through observation, in-depth interviews, and documentation, which are then analyzed thematically to uncover patterns, meanings, and relationships among actors involved in environmental mitigation. Such a design provides flexibility to capture the social realities and local wisdom embedded in community actions.

Research Object and Unit of Analysis

The material object of this study is the community of Tanjung Tiram Village, located in North Moramo District. The unit of analysis centers on the forms of social collaboration between the community and the village government in mitigating environmental degradation. This location was chosen due to its ecological emergency, characterized by rampant illegal logging, river pollution, and poor waste management practices. The selected unit of analysis is relevant because the community acts as the primary actor in environmental activities, while the village government serves as the facilitator of policy. The analysis focuses on interactions, roles, and collaborative patterns, aiming to portray a comprehensive picture of the cooperation dynamics observed in the field.

Data Sources

The primary data sources consist of residents of Tanjung Tiram Village, village and sub-district government officials, youth groups, women's organizations, and local business actors. Informants were selected purposively based on their experience, knowledge, and direct involvement in village environmental issues. The selection process ensured representation across different social groups, for example, village officials were interviewed for policy aspects, youth groups for environmental actions, and farmers and fishermen for economic resilience issues. This diverse participant composition enriches the dataset and captures the multidimensional nature of social collaboration.

Data Collection Techniques

Data were collected through participant observation, in-depth interviews, and documentation: (1) Participant observation was conducted to examine community behaviors in daily environmental activities. In-depth interviews explored participants' experiences, perceptions, and motivations concerning collaborative environmental practices; (2) Documentation included activity records, photographs, and policy documents to substantiate empirical findings; (3) These combined techniques aimed to generate a holistic understanding of the forms, stages, and challenges of collaboration. All data collection processes were carried out systematically using structured instruments aligned with the study objectives, ensuring consistency and research validity.

Data Analysis

Data were analyzed using thematic analysis, a qualitative method that enables the identification of patterns, themes, and relationships within the collected data. This analytical approach prioritizes the interpretation of meaning derived from participants' experiences rather than surface-level information. The goal was to conceptualize the categories of collaboration forms, participation typologies, and environmental mitigation strategies.

The analysis process followed four stages: data reduction, categorization, interpretation, and verification. Through this process, the study ensures that the resulting findings are valid, reliable, and directly aligned with the research objectives.

RESULTS AND DISCUSSION

The findings of this study reveal that environmental degradation mitigation in Tanjung Tiram Village is conducted through social collaboration between the community and the village government. This collaboration is manifested in deliberative forums, collective community actions, and environmental education programs. The main research question, how social collaboration helps mitigate environmental degradation, is answered by identifying three dominant patterns: (1) government–community partnership in reforestation initiatives; (2) deliberative citizen participation in planning forums, and (3) mitigation strategies combining preventive, rehabilitative, and adaptive approaches.

These findings underscore that the success of environmental mitigation depends on synergy between formal institutions and local community actors.

Table 1. Typology of Social Collaboration, Community Participation, and Environmental Mitigation Strategies in Tanjung Tiram Village

Focus Aspect	Typology/Form/ Strategy	Rationale/Description	Concrete Example in Tanjung Tiram Village
Social Collaboration	Partnership between the community and the village government	Effective partnership through clear role division: the community acts, the government facilitates	The village government provides tree seedlings; residents conduct planting in critical areas
Community Participation	Deliberative participation through community forums	Enables citizens to voice needs and preferences, ensuring locally relevant decision-making	Community forums discuss waste management solutions before implementation
Community Participation	Action-based participation	Focused on citizens' direct involvement in practical environmental activities	Monthly river-cleaning activities are conducted jointly by youth and women's groups
Environmental Mitigation Strategy	Preventive	Reducing risks before environmental damage worsens	Education and socialization on household waste management
Environmental Mitigation Strategy	Rehabilitative	Restoring damaged ecosystems	Reforestation and tree planting in areas affected by illegal logging
Environmental Mitigation Strategy	Adaptive	Providing sustainable solutions to cope with existing risks	Use of compost made from organic waste for sustainable agriculture

Source: Primary Data, 2025

The table demonstrates that social collaboration in Tanjung Tiram Village takes the form of genuine partnerships, community participation occurs through deliberative forums and collective actions, and mitigation strategies integrate preventive, rehabilitative, and adaptive measures. This synergy highlights that program success relies on the interplay among government policy, citizen involvement, and multi-layered strategies for ecosystem preservation.

The data presented in this study emphasize the relevance of social collaboration as a strategy for mitigating environmental degradation in Tanjung Tiram Village. This focus is critical since environmental issues cannot be addressed by a single actor but rather require inter-actor synergy. For example, recurrent seasonal flooding and river

pollution not only affect ecosystems but also disrupt farmers' and fishermen's livelihoods. By presenting such data, the study connects field-based realities to theoretical demands for understanding the role of social collaboration. This restatement also introduces the empirical findings summarized in the table, providing readers with a clear link between the study's conceptual focus and its evidentiary foundation.

Social Collaboration

Social collaboration refers to the interactive process among various actors, both individuals and institutions, who share resources, information, and responsibilities to achieve common goals. According to Arnstein (1969), collaboration represents a level within the broader spectrum of citizen participation in public decision-making. In the context of public administration, Fung (2006) conceptualizes collaboration as a form of co-governance that enhances policy legitimacy. Similarly, Reed (2008) explains that collaboration is built upon mutual trust, effective communication, and sustained interaction. Thus, social collaboration can be understood as a strategic approach that bridges the capabilities of both communities and governments to address public issues, including environmental challenges.

Data from interviews and observations (as reflected in Table 1) identify three essential patterns of social collaboration: (1) tangible partnerships with clearly distributed roles; (2) active government engagement in providing policies and facilities, and (3) community involvement in field-based actions such as reforestation and river clean-up campaigns. The findings consistently indicate that the government functions as a facilitator, while the community acts as an implementer. For instance, the village government supplies tree seedlings, and youth groups conduct planting activities in degraded lands. This pattern demonstrates that social collaboration has evolved beyond formality into daily community practice.

The interrelationship between these data points illustrates that collaboration succeeds when actors complement one another: policy without community action remains ineffective, whereas citizen action without government support lacks sustainability. The socio-ecological context of the village reinforces this dynamic, given residents' dependence on forests, rivers, and agricultural land. Moreover, trust among actors increased following the establishment of deliberative forums, shifting the collaboration from a consultative to a full partnership stage. These findings affirm that social collaboration serves as both a social adaptation mechanism and a collective empowerment tool in addressing environmental degradation.

The typology of social collaboration can be classified into several forms, ranging from consultation and partnership to joint decision-making. Rowe & Frewer (2000) differentiate collaboration based on modes of citizen involvement: informative, consultative, and participatory. A recent study demonstrates that, within the context of rural development, collaboration becomes most effective when structured as long-term partnerships that involve communities from the planning phase onward. The typical stages of collaboration include: (1) identifying shared problems, (2) participatory planning, (3) collective action implementation, and (4) collaborative evaluation. A notable example is the Climate Village Program in Cilacap, where government, community, and private sector actors jointly engage in climate change mitigation (Ramdani & Resnawaty, 2021). These categorizations suggest that collaboration is not merely communicative but a dynamic process demanding sustained commitment among all stakeholders.

Description of Community Participation

Community participation is defined as the active involvement of citizens in planning, implementing, and evaluating development activities that affect their lives. Pateman (1970) views participation as the foundation of substantive democracy that reinforces the legitimacy of public policy. King, Feltey, and Susel (1998) argue that authentic participation occurs when communities have a genuine space to influence decisions. Meanwhile, Leach and Sabatier (2005) emphasize that effective participation requires mutual trust among actors. Hence, community participation in environmental management should not be seen as mere formal involvement, but rather as a process of empowerment that enhances quality of life while preserving the ecosystem.

Table 1 highlights three key aspects of community participation: (1) deliberative forums effectively shape village environmental policies; (2)

opportunities to contribute both in decision-making and in tangible actions. For instance, community forums deliberate waste management solutions before they are formalized into village regulations. This demonstrates that participation in Tanjung Tiram is not symbolic but authentic and productive.

There exists a strong link between deliberative participation and direct action. While forums generate social legitimacy, collective action yields practical results in the field. In the context of Tanjung Tiram, such participation fosters social solidarity among diverse groups of youth, homemakers, and fishermen who jointly mitigate environmental damage. Analytical findings reveal that participation enhances collaboration because jointly made decisions are more widely accepted and effectively implemented. Consequently, community participation functions as the driving force ensuring the continuity and sustainability of environmental mitigation efforts.

The typology of community participation can be categorized according to levels of involvement. Arnstein (1969) describes the "ladder of participation," ranging from manipulation to full citizen control. A study published in the Journal of Community Empowerment and Environmental Adaptation (2024) further asserts that substantive participation emerges from collaborative leadership and inclusive deliberative spaces. Participation may take various forms such as gotong royong (mutual cooperation), community forums, or environmental policy advocacy. The stages of participation generally progress through awareness building, community organization, decision-making, and policy monitoring. A concrete example can be seen in Sleman's environmental education program, where citizens not only join reforestation efforts but also monitor the implementation of village environmental policies (Journal of Community Empowerment & Environmental Adaptation, 2024). Thus, participation should be viewed not as mere attendance but as a social force shaping environmental sustainability.

Description of Environmental Mitigation

Environmental degradation mitigation is defined as systematic efforts to prevent, reduce, and control the adverse impacts of human activities on ecosystems. According to the UNDRR (2015), mitigation encompasses both structural and non-structural strategies aimed at reducing disaster risks. Shrestha et al. (2020) highlight the importance of community-based approaches in managing urban flood risks, while the World Bank (2017) stresses that effective mitigation integrates simple technologies, local knowledge, and public policies. Therefore, environmental mitigation should not be treated solely as a technical intervention but rather as a holistic strategy that combines social, economic, and ecological dimensions.

The findings (see Table 1) identify three primary mitigation strategies: (1) Preventive through education and awareness on household waste management; (2) Rehabilitative through reforestation of degraded land; and (3) Adaptive through the use of organic compost derived from household waste to support sustainable agriculture. Interview data show that residents understand the importance of prevention while recognizing the necessity of restoration and adaptation. A concrete example is the initiative by local farmers' groups to convert organic waste into compost, reducing dependency on chemical fertilizers. These practices reflect a balanced orientation between short-term responsiveness and long-term resilience.

The typology of environmental mitigation can be divided into preventive, adaptive, and rehabilitative forms. The OECD (2015) explains that preventive strategies emphasize early actions to avert potential damage, while adaptive strategies focus on community adjustment to ongoing risks. A study in the Journal of Collaborative Conflict Resolution (2023) outlines that community-level mitigation typically includes: (1) risk mapping, (2) education and awareness campaigns, (3) implementation of eco-friendly technologies, and (4) sustainability evaluation. For example, coastal communities in Java have successfully reduced marine pollution through integrated waste management and mangrove reforestation initiatives. This typology underlines that environmental mitigation requires continuity and balance, safeguarding natural ecosystems while simultaneously enhancing community welfare.

The integration among these three strategies, preventive, rehabilitative, and adaptive, is evident. Education strengthens awareness; reforestation restores ecosystem functions; and adaptive practices sustain village livelihoods. The local context reinforces this integration, as the community's economy depends heavily on natural resources. For

example, reforestation not only mitigates flood risks but also provides long-term forest products for income. Therefore, the findings confirm that effective environmental mitigation requires a holistic and continuous strategy, blending government facilitation, community participation, and local ecological wisdom.

This study successfully addresses the central question of how social collaboration between the community and the village government can mitigate environmental degradation in Tanjung Tiram Village. The findings reveal that collaborative practices are realized through genuine partnerships, deliberative citizen forums, and collective community actions such as reforestation and river-cleaning programs. Moreover, mitigation strategies in the village are well-balanced across preventive, rehabilitative, and adaptive approaches. These results align with the study's objective to construct an effective community-based collaboration model to confront ecological challenges in coastal villages. Thus, the study demonstrates that environmental mitigation is not merely a technical intervention but a social process grounded in solidarity, trust, and local participation.

The findings illustrate that social collaboration not only improves environmental conditions but also strengthens the social cohesion of the village. This process highlights that the success of mitigation arises from the interconnectedness of roles: the government acts as the policy facilitator, while the community functions as the field actor. The interpretation suggests that top-down interventions are ineffective without authentic citizen participation, and conversely, bottom-up actions are unsustainable without regulatory and institutional support.

A concrete example is the village reforestation program, which succeeded because deliberative forums fostered community ownership of the initiative. The deeper implication is that environmental mitigation, when grounded in local collaboration, evolves into a form of social innovation capable of generating transformative change in both ecological and governance systems. Therefore, social collaboration operates not as an administrative strategy but as a mechanism for socio-ecological transformation.

In the context of Tanjung Tiram Village, the study identifies that the community's economic dependence on forests, rivers, and agricultural land serves as a key factor motivating social collaboration. Environmental degradation directly disrupts livelihoods, thereby prompting citizens to engage in mitigation activities. The village government, seeking to maintain social and economic stability, actively participates as a facilitator and policy provider.

The geographical vulnerability of the coastal area, particularly to flooding, further emphasizes the necessity of preventive strategies, while the limited access to advanced technology encourages adaptive measures based on local wisdom, such as the production of organic compost. When contextualized within these socio-economic and ecological realities, it becomes clear that social collaboration emerges as both a rational community response and a collective adaptation strategy to environmental and economic pressures.

Theoretical Implications

Theoretically, the findings contribute to the growing body of literature on community-based environmental governance by demonstrating that small-scale, resource-limited communities can develop effective participatory mitigation models. The study substantiates Shrestha et al. (2020), who emphasized the importance of community participation in environmental risk reduction across Asia. However, this research expands the perspective by situating collaboration within coastal rural contexts, where social capital, rather than technological infrastructure, drives mitigation success.

The results also align with the Journal of Community Empowerment and Environmental Adaptation (2024), which underscores collaborative leadership as the foundation of substantive participation. Nonetheless, the Tanjung Tiram case offers a novel dimension by highlighting collective citizen action as the practical expression of that leadership. Compared to the Climate Village Program in Cilacap (Ramdani & Resnawaty, 2021), which emphasizes multi-sector partnerships, the present study provides evidence of a grassroots-driven synergy between village policies and community initiatives. Thus, this study contributes a unique theoretical insight: social collaboration in coastal villages can serve as a replicable model for contextual and sustainable environmental mitigation, integrating social empowerment, local

ecological knowledge, and participatory governance.

Practical Implications

Practically, the findings underscore that empowering communities through deliberative forums and collective environmental actions can establish a sustainable foundation for mitigating environmental degradation. The study demonstrates that such collaboration fosters: (1) the creation of autonomous local institutions for environmental stewardship; (2) enhanced ecological awareness among citizens, and (3) the development of participatory village policies. If replicated, this model has the potential to strengthen socio-ecological resilience across other coastal villages in Indonesia. Moreover, by aligning community-based practices with local governance mechanisms, this approach enables bottom-up environmental management that is both culturally embedded and institutionally supported.

Therefore, the main implication of this study is the affirmation that sustainable environmental transformation can only be achieved through continuous social collaboration, a process that unites collective action, participatory governance, and ecological stewardship within an integrated framework.

CONCLUSIONS

This study concludes that social collaboration between the community and the village government of Tanjung Tiram functions not only as an environmental mitigation mechanism but also as a catalyst for strengthening social solidarity and collective awareness. The most significant finding lies in the behavioral transformation of citizens from being passive observers to becoming active participants following the establishment of deliberative forums. This change demonstrates that inclusive participatory spaces can reshape community perspectives on environmental issues, fostering a stronger sense of ownership and shared responsibility. The results further confirm that socio-ecological resilience in resource-limited coastal villages can be effectively built through integrated collaboration. The synergy between government facilitation and community initiative produces tangible ecological outcomes such as reforestation, waste management, and the adoption of adaptive agricultural practices while simultaneously reinforcing local governance structures. Hence, this study reaffirms that environmental mitigation is not solely a technical endeavor, but fundamentally a social and institutional process, grounded in trust, cooperation, and the alignment of shared goals among diverse actors.

The scholarly contribution of this study lies in the development of a community-based social collaboration model for environmental mitigation in coastal villages with limited resources. Previous literature has largely concentrated on urban or large-scale disaster-prone contexts, whereas this research provides empirical evidence from a micro-level coastal setting. The novelty of this study is twofold: (1) It demonstrates that even under constrained conditions, local communities can establish effective preventive, rehabilitative, and adaptive strategies that are both practical and sustainable; (2) It introduces the concept of the deliberative forum as a catalyst for socio-ecological transformation, enabling community members to co-create solutions and sustain environmental actions collaboratively. This perspective enriches the existing body of literature on community-based governance and offers a replicable framework for small-scale participatory environmental management across similar socio-ecological contexts.

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