



Strengthening Coastal Community Empowerment in Lamungan Batu Village : Sustainable Environmental and Socio-Economic Solutions

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Abstract: This study explores community empowerment initiatives in Lamungan Batu Village through a multidisciplinary approach integrating environmental sustainability, public health awareness, and participatory governance. The objective was to identify challenges and mobilize local capacities in addressing waste management, food security, and social issues such as stunting and early marriage. Using field observations, participatory action methods. Key findings show that combining health education, environmental campaigns, and youth led innovation fosters a stronger sense of ownership and behavior change within the community. This paper concludes that community based learning integrated into village development planning holds substantial potential for long term impact and can be replicated in other rural coastal areas undergoing similar socio environmental transitions.

1. INTRODUCTION

Lamungan Batu Village, located on the coast of Malunda Subdistrict in Majene Regency, holds substantial economic potential, particularly in agriculture and fisheries. However, behind this potential lie complex structural and social challenges. Issues such as the lack of proper waste management facilities, overreliance on chemical fertilizers, high rates of stunting, and child marriage hinder the realization of sustainable development in the area. Its geographic vulnerability to coastal abrasion and climate change further exacerbates these problems.

Numerous studies have highlighted that community based empowerment can serve as a strategic solution to such multidimensional challenges (Dewi & Kurniawan, 2020; Halim & Putri, 2023). This empowerment should be tied to institutional strengthening, capacity building of local human resources, and cross sector collaboration among the government, universities, and civil society organizations. The implementation of KKN (Student Community Service Program) by university students is one form of social intervention expected to trigger participatory and sustainable behavioral change among the local population.

Although various positive initiatives have been observed, such as the establishment of waste bank communities and organic fertilizer training, most of these efforts remain sporadic and are not yet integrated into long term development plans. Furthermore, limited research has comprehensively examined the synergy between empowerment programs, environmental preservation, and socio economic strengthening in coastal areas such as Lamungan Batu. This study aims to fill that gap with a more holistic and contextual approach.

The novelty of this research lies in its integration of three main issues environmental, economic, and social within the framework of community empowerment through the KKN program. The central focus is how local communities adopt values of environmental conservation and economic self reliance with the support of structural and educational interventions. Therefore, this study is expected to provide both academic and practical contributions to the advancement of sustainable coastal development.

The primary objective of this research is to formulate an empowerment strategy for coastal communities in Lamungan Batu Village that integrates environmental, economic, and social solutions in a sustainable manner. It also seeks to evaluate the effectiveness of the KKN program in the local context and to identify key enabling and inhibiting factors that affect its success.

2. THEORETICAL STUDY

The concept of community empowerment has evolved significantly over the past decades, encompassing not only economic capacity building but also social and environmental dimensions. According to Chambers (1997), empowerment is a process through which individuals and communities gain control over decisions and actions that affect their lives. In the context of coastal communities, this involves participatory development strategies, institutional collaboration, and local leadership in addressing complex environmental and socio economic issues.

Environmental sustainability in coastal areas, as discussed by Adger et al. (2005), is closely linked to community resilience and adaptive capacity. Empowering communities to manage their own natural resources such as through waste management, organic farming, and coastal conservation has shown to enhance long term ecological stability. This perspective is supported by Pretty (2003), who emphasizes the role of social capital and collective action in building sustainable local ecosystems.

From a socio economic standpoint, community empowerment programs are particularly crucial in addressing poverty, health disparities, and access to education. Stunting and early marriage, for example, are strongly correlated with low income, limited health literacy, and inadequate community support structures (Black et al., 2013). Empowerment approaches that include health education, family planning, and youth engagement can effectively tackle these interlinked challenges.

The KKN (Student Community Service Program) in Indonesia serves as a practical platform for implementing community based interventions. As noted by Pranoto and Kusumaningrum (2019), KKN can foster a two way learning process between students and local residents, facilitating the dissemination of innovations such as waste banks and organic composting techniques. However, the effectiveness of such programs often depends on institutional alignment and long term commitment from local stakeholders.

In terms of policy, studies by Ostrom (2009) highlight that decentralized governance models where community members are involved in planning, monitoring, and decision making tend to yield better outcomes in resource management and social cohesion. Applying these principles in Lamungan Batu can help strengthen local governance and institutional sustainability.

Despite these theoretical insights, there remains a gap in literature specifically examining the integrated effects of environmental, economic, and social empowerment within a single framework, particularly in Indonesian coastal villages. This study contributes to bridging that gap by offering an empirical assessment of a multi dimensional empowerment model as implemented through the KKN program in Lamungan Batu.

3. RESEARCH METHODS

This research adopts a qualitative approach with a descriptive study design to explore the socio economic and environmental dynamics in Lamungan Batu Village. The qualitative method is selected for its ability to capture in depth insights into people's motivations, perceptions, and values in relation to empowerment programs and local development.

The population of the study encompasses the entire community of Lamungan Batu Village, with purposive sampling employed to select informants who are directly involved in or affected by empowerment initiatives. Key informants include village officials engaged in environmental programs, farmers transitioning to organic practices, youth activists, and

micro business owners utilizing marine products. This diverse selection ensures a comprehensive understanding of local empowerment challenges and opportunities.

Data collection techniques consist of in depth interviews, participatory observation, and document analysis. In depth interviews aim to uncover perspectives and motivations of individuals ranging from community leaders to youth groups involved in environmental conservation. Participatory observation allows the researcher to directly observe and engage in community activities such as waste management practices, organic fertilizer application, and public health outreach. Meanwhile, document analysis involves reviewing village development reports, community statistics, and official local regulations.

All data were analyzed using thematic analysis, where findings were categorized into themes such as environmental awareness, economic independence, and social well being. Credibility and trustworthiness of the data were maintained through triangulation of methods and cross validation with community stakeholders.

The study was conducted between March and June 2024 in various locations within Lamungan Batu Village, including coastal zones, agricultural fields, schools, and community centers. Ethical considerations were observed, including obtaining informed consent from all participants and maintaining confidentiality throughout the research process.

4. RESULTS AND DISCUSSION

The findings from Lamungan Batu Village reveal multifaceted dynamics in environmental management, economic livelihoods, and social health conditions. Data from interviews and observations indicate that waste management practices remain underdeveloped, with households relying on burning or disposing of trash in the sea due to the absence of a landfill facility. While sporadic community clean up events occur, sustainable routines are still lacking. Notably, a youth led initiative to create a waste bank has emerged, offering a practical example of local empowerment, albeit with limited infrastructure and financial support.

In the agricultural sector, over 70% of residents rely on farming, but soil degradation and saltwater intrusion threaten productivity. Farmers voiced concerns about the rising costs of chemical fertilizers and a lack of knowledge regarding organic alternatives. Although some young farmers experimented with composting livestock waste, broader adoption is constrained by insufficient training and tools. Village development

meetings (musrenbang) had proposed organic agriculture programs, yet these remain unrealized due to limited budget allocations and weak technical assistance.

Regarding public health, stunting and early marriage remain persistent issues. Health workers reported improved awareness of child nutrition, but socio economic constraints and cultural practices continue to hinder behavioral change. Young mothers often lack access to reproductive health information and essential prenatal care. The study also revealed a shortage of reading materials and functional libraries, affecting children's literacy levels. Although community driven literacy campaigns exist, they require structural integration into the village's educational agenda to ensure sustainability.

From an economic perspective, most residents supplement income through fishing and small scale trade, but opportunities for value added production remain untapped. KKN programs have supported some micro entrepreneurs through skills training, yet continuity is often compromised once the program ends. Local leaders emphasized the need for consistent mentoring, marketing support, and access to capital. Coordination between government agencies, NGOs, and academic institutions remains fragmented, limiting the impact of otherwise promising interventions.

Despite these challenges, the research identified strong potential for community based solutions. Residents demonstrated readiness to participate in development initiatives, especially when supported by clear objectives, inclusive leadership, and practical benefits. The waste bank and composting pilot, though nascent, illustrate that empowerment programs can yield tangible outcomes if accompanied by institutional support and long term planning.

Overall, the discussion underscores the importance of designing integrated and context specific strategies that align with the lived realities of the community. Empowerment efforts in Lamungan Batu must move beyond symbolic participation and be institutionalized into regular governance mechanisms. Addressing the interconnected issues of environmental degradation, economic vulnerability, and social inequality requires multi stakeholder collaboration, investment in grassroots leadership, and adaptive policies rooted in local wisdom and evidence based practices.

The results of the study show that waste management efforts in Lamungan Batu Village are still sporadic, mainly due to the absence of a landfill and other supporting facilities. People usually collect waste periodically and then throw it into the sea or burn it independently. This practice not only threatens the sustainability of the coastal environment but also has an impact on public health in the long term (Handayani & Zulkarnain, 2021).

Based on observation data, the beaches around the village are often decorated with plastic and styrofoam remains carried by the current.



Figure 1. Community Environmental Observation

This figure presents a visual documentation of environmental conditions in Lamungan Batu Village, specifically along its coastal areas and surrounding neighborhoods. It captures prevalent issues such as the accumulation of plastic waste, open burning practices, and the absence of formal waste collection infrastructure. Observations revealed that waste is often scattered along beach areas or disposed of in nearby bushes and rivers, highlighting the urgency for structured waste management systems. The figure also illustrates moments of community led cleanup activities, though infrequent, reflecting a growing but inconsistent awareness of environmental stewardship among residents. This visual evidence supports qualitative findings and underscores the importance of institutional support to transform sporadic efforts into sustainable waste management practices.

From a social perspective, the issues of stunting and child marriage reflect the need for a multisectoral approach. The results of the study showed that nutritional problems in toddlers and early marriage practices are correlated with family income levels, parental understanding of reproductive health, and access to health services (Ajeng & Wicaksono, 2022). On the other hand, low interest in literacy among children hinders the strengthening of long term human resource quality (Nurhayati, 2023). Various KKN programs that have been initiated, such as the return of the library function at SDN 38 Pao Pao, have not run optimally due to the lack of ongoing support. However, the involvement of community leaders and youth has begun to produce changes in attitudes, especially in cleaning activities and the dissemination of educational information. In other words, empowerment

involving local communities appears effective, but still requires systematic integration from village officials and other stakeholders.



Figure 2. Sosialisasi Stunting dan Diversifikasi Pangan

This figure depicts a community outreach session held as part of a broader initiative to address stunting and promote food diversification in Lamungan Batu Village. Organized by local health officers in collaboration with KKN (Student Community Service) volunteers, the session served as both an educational and participatory activity targeting women, young mothers, and caregivers. Participants were provided with accessible information on childhood nutrition, the risks of chronic malnutrition, and affordable ways to enrich daily diets using locally available ingredients.

The visual captures an interactive atmosphere where attendees actively engaged in discussions, cooking demonstrations, and Q&A sessions. Health workers emphasized the importance of maternal health, exclusive breastfeeding, and adequate complementary feeding practices. In parallel, students introduced simple recipes using diverse food groups, including vegetables, legumes, and fish ingredients that are abundant in the coastal region but often underutilized in daily meals. Beyond nutritional education, the session also addressed the social root causes of stunting, including child marriage, low reproductive health literacy, and limited access to health services. By integrating stunting prevention with reproductive health promotion, the activity tackled interconnected challenges that affect the long term well being of children in the village.

This figure highlights the significance of multi sectoral collaboration and culturally sensitive outreach strategies in promoting behavior change. It also underscores the role of community based learning, where local knowledge and scientific insights converge to create practical, impactful solutions. Such initiatives, when sustained and integrated into village level development planning, hold promise for reducing stunting rates and enhancing

the quality of life in coastal communities like Lamungan Batu. This figure depicts a stunting awareness session conducted collaboratively by health workers and KKN student volunteers. The image captures community engagement during a health education program focused on improving child nutrition and encouraging dietary diversification using local food sources. The activity also reflects efforts to reduce early marriage by raising awareness on reproductive health and the importance of maternal readiness. This visual supports findings on the role of community participation in enhancing health literacy and promoting behavior change, particularly among young mothers and caregivers.

5. CONCLUSION AND RECOMMENDATION

This study concludes that effective community empowerment in Lamungan Batu Village hinges on the integration of environmental preservation, economic resilience, and social transformation under a cohesive strategy supported by both local governance and external collaboration. The community continues to face multifaceted challenges, including insufficient waste infrastructure, excessive dependency on chemical fertilizers, and persistent health issues such as stunting and early marriage. However, the findings suggest a strong sense of willingness among the residents to actively engage in community development efforts when provided with inclusive platforms and sustained support.

Notable grassroots initiatives such as youth led waste banks, organic composting efforts, and literacy promotion programs demonstrate that meaningful and sustainable transformation is possible when local capacities are nurtured. Despite this potential, structural barriers such as limited access to training, funding, and policy coherence continue to hinder long term success. To bridge this gap, empowerment must be institutionalized through village development plans and supported by coordinated policies and cross sector partnerships.

Therefore, it is essential to foster institutional commitment, enhance capacity building programs, empower youth leadership, and promote collaborative governance that aligns with community needs. With these efforts, Lamungan Batu Village can serve as a replicable model for integrated coastal development that honors local wisdom while embracing evidence based practices for a sustainable and inclusive future.

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