

A Community-Based Environmental Empowerment Model Through Social Movements and Local Institutions: Strategies for Strengthening and Implementation

Agustrisno¹, Zulkifli Lubis², Fikarwin Zuska³, Farid Aulia⁴, Nita Savitri⁵

Universitas Sumatera Utara, Medan, North Sumatera, Indonesia

Article Info	ABSTRACT
Keywords: Social Movement, Waste Management, and Local Institutions	Environmental management and village cleanliness through social movements in community empowerment efforts in Sei Nagalawan Village, Perbaungan District, Serdang Bedagai Regency, are still constrained by various factors. These include: the limited capacity of the village community to reduce the rapidly increasing volume of waste, the low level of community knowledge regarding waste management and household yard cleanliness, and weak partnerships in community-based waste management initiatives. This situation needs to be addressed through community service programs. The activities are designed to empower the PKK (Family Welfare Movement) Women's Group, village Posyandu (Integrated Health Post) cadres, and the broader community by providing outreach and awareness-raising on the importance of maintaining a clean, waste-free environment through social movements. The objectives of this independent community service program are to: (1) contribute to reducing the alarming rate of waste generation, (2) increase the knowledge of PKK members and Posyandu cadres on waste management, and (3) strengthen local institutions as a means of fostering community-based social movements for waste management. The methods used in this program include: socialization and training on environmental management with a focus on preventing yard waste, and a participatory approach to social movements that integrates the role of local institutions. The results of this community service initiative demonstrate increased community motivation to manage waste and maintain clean household yards through social movement-based approaches.
This is an open access article under the CC BY-NC license 	Corresponding Author: Agustrisno Universitas Sumatera Utara, Medan, North Sumatera, Indonesia farid_aulia@usu.ac.id

INTRODUCTION

Waste remains a serious environmental issue that affects the social, economic, and cultural life of both rural and urban communities. Many people still perceive waste as something that is worthless and should simply be discarded. In practice, waste is the residual result of daily human activity and natural processes in both solid and liquid forms. The problem is compounded by the limited availability of land for landfills (TPA), leading many residents to dispose of waste into rivers. The waste carried by the river eventually flows into the sea, polluting marine environments and damaging ecosystems. A clean environment is a key

indicator of public health. Law No. 36 of 2009 on Health emphasizes that a healthy society can only be achieved through health development closely related to environmental sanitation. Environmental cleanliness encompasses public spaces, residential areas, and workplaces. Cleanliness must start at the household level, beginning with the maintenance of yards and the streets in front of houses to ensure they are free from waste.

Buhungo (2012) defines environmental cleanliness as a condition free from dirt and disease, both of which can negatively impact social behavior and public health. A healthy environment must be built from the individual and household scale before expanding to the community level. Thus, awareness and responsibility for cleanliness must be internalized as part of daily life.

Every household is expected to provide trash bins in multiple locations, such as the kitchen, bathroom, and yard. Waste segregation into wet and dry categories is an essential first step in waste management. When different types of waste are mixed, they not only produce unpleasant odors but also prevent opportunities for recycling. Waste that is not disposed of regularly or is allowed to accumulate can attract insects such as flies and cockroaches, increasing the risk of disease transmission. However, in Sei Nagalawan Village, Perbaungan District, Serdang Bedagai Regency, littering behavior persists. Waste is still scattered along village roads and in residential yards, degrading environmental aesthetics and posing health risks. The daily activities of the residents—many of whom work as rice farmers—tend to reduce attention to yard cleanliness and waste management. In addition to creating the appearance of slum-like conditions, unmanaged waste can serve as a breeding ground for disease vectors.

These conditions highlight the urgency of building community-based environmental awareness through social movements. Waste management, yard cleanliness, and responsible disposal practices must not remain individual concerns but should transform into collective action supported by local institutions. To address the current situation, a community service initiative was deemed necessary, focusing on environmental education, behavioral change, and institutional strengthening. The proposed program aims to empower members of the PKK (Family Welfare Empowerment Group), Posyandu cadres, and local residents through capacity building and participatory approaches. Based on observations and initial assessment, the key problems faced by Sei Nagalawan Village include:

1. Low understanding among PKK members and Posyandu cadres regarding environmental social movements and community-based waste management.
2. Limited capacity of local stakeholders in strengthening community institutions to support sustainable environmental practices.

These challenges call for structured intervention through education, empowerment, and local institutional engagement, with a focus on transforming environmental management into a community-driven social movement.

literature review

Community-Based Environmental Management

Community-based environmental management (CBEM) emphasizes the role of local communities in planning, implementing, and sustaining environmental initiatives. According

to Agrawal and Gibson (2019), CBEM decentralizes authority and promotes participatory governance by empowering communities to become active agents in managing natural resources and environmental cleanliness. In rural contexts, CBEM often includes waste reduction, sanitation practices, and land use management. Effective community-based approaches typically involve collaboration among households, local leaders, and policy institutions. Research by Rahmawati et al. (2021) highlights that communities with strong participation tend to achieve better outcomes in waste management and environmental conservation. However, the success of CBEM is influenced by the availability of knowledge, institutional support, and collective action mechanisms.

The community service program at the Anthropology Laboratory of the Faculty of Social and Political Sciences, University of North Sumatra, is expected to expand knowledge and information on the importance of environmental waste management and strengthening local institutions. Furthermore, this activity is expected to change the community's mindset about waste management and yard cleanliness, thus fostering a social movement involving the participation of all elements of the village community and strengthening local institutions. The goal of improving the community's quality of life can be achieved.

Social Movement Theory in Environmental Action

Social movements play a crucial role in mobilizing collective awareness and participation. Tilly (2004) explains that social movements emerge as organized efforts by communities to address shared problems through coordinated actions. In environmental contexts, social movements encourage behavioral change, public awareness, and advocacy for sustainable practices.

Castells (2015) asserts that environmental social movements often arise from grassroots initiatives and rely on community solidarity, communication networks, and local leadership. These movements can drive normative shifts, promote recycling, reduce littering, and foster accountability in environmental practices. In developing regions, informal social movements—such as neighborhood clean-ups or collective waste management programs—are often more effective than top-down enforcement (Sasongko & Dewi, 2020).

The Role of Local Institutions in Environmental Governance

Local institutions—such as village governments, PKK groups, and community health cadres (Posyandu)—are vital intermediaries between public policy and community behavior. Ostrom (2011) argues that local institutions facilitate rule-making, collective decision-making, and resource management at the community level.

In Indonesia, local institutional structures such as PKK, Karang Taruna, and village councils have historically contributed to social mobilization and community-based development. Studies by Pranoto (2020) and Lestari (2022) emphasize that institutional strengthening improves continuity, accountability, and sustainability of environmental programs.

Local institutions can function as:

1. Organizers of environmental campaigns,
2. Facilitators of behavioral change,
3. Coordinators of inter-household waste management,
4. Mediators in policy implementation.

Empowerment Models in Environmental Initiatives

Community empowerment is a strategic approach to develop problem-solving capacity and decision-making autonomy. According to Chambers (2014), empowerment includes capacity building, awareness raising, and collective responsibility in planning and action. In the context of environmental management, empowerment models often include:

1. Participatory training,
2. Socialization and awareness campaigns,
3. Collaborative decision-making,
4. Skill development in waste processing and reuse.

A study by Sari & Hudaya (2021) shows that empowerment programs targeting women's groups, health volunteers, and youth networks significantly increase environmental awareness and participation.

Integration of Social Movements and Local Institutions

Environmental empowerment is most effective when social movements are supported by institutional frameworks. Combining grassroots mobilization with organizational structure creates sustainable environmental practices.

According to Kartika and Hidayat (2020), integration of social movements and local institutions supports:

1. Behavioral change through peer influence,
2. Program continuity through structured roles and resources,
3. Greater legitimacy and accountability,
4. Replicability of community-based intervention models.

The alignment of institutional leadership and social engagement enables behavioral transformation from individual action to community norms.

Previous Studies and Research Gaps

Several previous studies have examined environmental empowerment:

1. Sukesu & Rinaldi (2019): Focused on waste bank models but lacked integration with local institutions.
2. Hakim et al. (2020): Analyzed social movements but did not incorporate capacity-building strategies.
3. Andriani (2021): Examined community empowerment but did not address sustainability mechanisms.

However, few studies combine:

1. Social movement-based environmental action,
2. Strengthening of local institutional structures,
3. Implementation strategies for long-term community adoption.

This research integrates these elements to propose a community-based environmental empowerment model that can be implemented in rural contexts like Sei Nagalawan Village.

METHOD OF RESEARCH

This study employed a community-based participatory approach with an empowerment and action-oriented framework. The method focused on strengthening environmental awareness and institutional capacity through social movements at the village level. The approach combined elements of community service, training, and participatory intervention to address waste management issues and institutional collaboration within Sei Nagalawan Village, Perbaungan District, Serdang Bedagai Regency. The primary participants in this program were:

1. PKK Women's Mobilization Team,
2. Posyandu cadres,
3. Village community leaders, and
4. Residents living in directly affected neighborhoods.

These groups were selected based on their strategic role in influencing community behavior and their involvement in household-based environmental practices.

Data were collected through a combination of:

1. Field Observation
Conducted to identify waste distribution patterns, yard cleanliness conditions, and environmental sanitation practices.
2. Interviews and Informal Discussions
Used to assess participant knowledge, perceptions, and readiness related to waste management and institutional involvement.
3. Participatory Mapping and Needs Assessment
Implemented to determine local problems, target locations, and the appropriate intervention strategies based on community context.

The intervention activities were carried out through three main stages:

Socialization and Awareness Building

Public outreach sessions were conducted to introduce:

1. The concept of environmental social movements,
2. Community-based waste management practices,
3. The role of local institutions in promoting sustainability.

These activities aimed to increase participants' understanding of waste reduction, disposal methods, and the impacts of littering on health and the ecosystem.

Training and Capacity Building

Capacity-building activities included:

1. Training on household waste sorting (wet and dry waste),
2. Methods for yard cleanliness maintenance,
3. Introduction of recycling and reuse practices,
4. Strengthening organizational coordination between PKK, Posyandu cadres, and local village bodies.

This stage emphasized behavioral change, knowledge transfer, and skill development.

Participatory Institutional Strengthening

A participatory approach was used to reinforce local institutions through:

1. Establishing communication networks among PKK, Posyandu, and community leaders,
2. Role-sharing in environmental monitoring,
3. Collective planning of follow-up actions,
4. Initiating informal regulations for waste management practices.

The outcomes of the activities were evaluated using:

1. Qualitative assessment, based on participant discussions, reflections, and visual changes in environmental conditions.
2. Behavioral indicators, such as adoption of trash bins, reduced littering in yards and along roads, and improved participation in cleaning activities.
3. Institutional indicators, including collaboration frequency, division of responsibilities, and continuation plans by PKK and Posyandu groups.

All activities were conducted with community consent and aligned with cultural norms of the village. No interventions were carried out without approval from village leaders and participant representatives. The implementation respected local customs, ensured inclusivity, and upheld non-coercive participation. In relation to the problems and programs that will be carried out to overcome the problems mentioned above, the solutions proposed to overcome and solve these problems are carried out using the following methods:

1. Environmental Management Socialization and Training

Socialization is carried out so that the group discussion material discussed focuses on the problem of the impact of declining environmental and health functions and how they view it to be able to overcome these problems in seeking alternatives to improve the social, economic and environmental quality of the community (Moeljiarto, 2017). Following the discussion, the activity continued with training on environmental management and strengthening local institutions. The training involved interactive and participatory presentations to community members, covering changes in mindset regarding environmental management and strengthening local institutions.

2. Participatory Approaches in Social Movements and Strengthening Local Institutions To improve capabilities at the individual level and strengthen institutions at the structural and system levels in the Sei Nagalawan Village community, a participatory approach was taken to increase the empowerment of the PKK Team and Posyandu Cadres in organizing partnerships. This approach recognizes two main steps, namely: awareness (conscientization) at the individual level and organization (community organization) at the structural and system level (Suparjan, 2013).

RESULT

Results And Outcomes Achieved

The implementation of independent community service activities organized by the Anthropology Laboratory of the Faculty of Social and Political Sciences of the University of North Sumatra for the PKK Team and Posyandu Cadres in Sei Nagalawan Village, Perbaungan District, Serdang Bedagai Regency began with data collection activities and waste management problems and strengthening local institutions faced by the community, especially in public services. Based on the data collected, waste management and yard cleanliness,

especially by the PKK Team and Posyandu Cadres, are currently being carried out by most tourist villages that have the potential for natural resources and human resources as destination capital in North Sumatra. The main obstacle to developing a tourism village is the amount of waste scattered around the village and in yards. Given this situation, empowering village officials, the Family Welfare Movement (PKK) and Integrated Service Post (Posyandu) cadres as part of a social movement for environmental management should be a key driver for the Sei Nagalawan Village community. One strategy is to train Sei Nagalawan village officials and the PKK to change their mindset, mentality, and behavior, as well as their ability to manage waste and keep yards clean. Furthermore, understanding the role of local institutions in improving the quality and dynamics of recent developments is crucial.

The socialization and training activities successfully increased environmental awareness among participants, especially members of the PKK Women's Mobilization Team and Posyandu cadres. Based on post-activity reflections and observations:

1. Participants gained a clearer understanding of the causes and impacts of unmanaged waste.
2. Knowledge about waste separation (wet and dry) improved significantly.
3. Participants began introducing trash bins in households and advising neighbors to maintain clean yards.

Several participants reported that before the program, they disposed of waste in open areas or burned it. After the intervention, they showed willingness to practice sorting and temporary storage. The implementation of community service in this independent community service program is carried out in several activities, with the following stages:

- Socialization of Community Service Activities.

This activity was carried out at the beginning before the Implementation Team conducted outreach on waste management and yard cleanliness. During the outreach, the Implementation Team explained that this activity was a pilot project of the Anthropology Laboratory of the Faculty of Social and Political Sciences, University of North Sumatra, to establish a partnership with the Sei Nagalawan Village Government, the Family Welfare Movement Team, and Integrated Health Post (Posyandu) cadres through waste management activities and the importance of maintaining environmental cleanliness. It is hoped that this activity will become a trigger to mobilize the Sei Village community in the future. Nagalawan is making a massive effort to create a clean and waste-free village environment. The Head of the Anthropology Laboratory, Faculty of Social and Political Sciences, University of North Sumatra (Dr. Farid Aulia, S.Sos, M.Si), the Sei Nagalawan Village Government, and the Family Welfare Movement (PKK) Team (Juliani) will forge a partnership to promote waste management and the importance of maintaining a clean environment in an environmental management movement involving all elements of society.



Figure 1. Community Service Socialization Activities Environmental Social Movement and Togetherness Training.

This activity was conducted with two stages of material presentation, consisting of a lecture and a discussion. The material presented was: Social Movements with Togetherness and Efforts to Build a Culture of Cleanliness, Environmental Health, and Natural Sustainability in Sei Nagalawan Village, Perbaungan District, Serdang Bedagai Regency. Speaker I (Drs. Agustrisno, M.SP) as the Head of the Implementation Team conveyed the analogy that recognizing the problem of waste and environmental cleanliness is the same as recognizing good team work consisting of: individuals in a group becoming empowered, capable and strong because it's facilitated by togetherness. The body serves as a mediator connecting humans with the world as the dimension of life. In other words, work ethic improves, becoming lighter for the common good and purpose.



Figure 2. Environmental Management Social Movement

Speaker II (Dr. Zulkili Lubis, M.Si.) explained the introduction of the ABCD concept in Asset-Based Development. This shift in mindset from the conventional approach is like a "glass half empty." The CD model focuses on strengths, potential, and how villages develop their potential, strengths, and assets (asset-based). It is hoped that this activity will be able

to build villages with ABCD as a progressive choice. The training was conducted by giving presentations to community members in an interactive and participatory manner, which included: changing mindsets about how to create a clean, healthy, comfortable environment free from plastic waste, and The remains of leaves, wet and dry fruit, and animal droppings were scattered along the village road. The activity continued with a question-and-answer session and discussion to prepare strategic steps for the future in following up on the joint action as a social movement.



Figure 3. Local Institutional Strengthening Training

Monitoring and Evaluation

After all activities have been implemented, monitoring is conducted and then evaluation is conducted. The results of this evaluation will be discussed again by the team and group and will serve as a basis for further improvements.

Reduction in Visible Waste in Public and Residential Areas

Field observations conducted before and after the program showed noticeable changes:

1. Decreased litter in the front yards of houses along main village roads.
2. Reduction of unmanaged waste in public spaces such as drainage channels and field edges.
3. Cleaner residential paths previously used as informal waste disposal sites.

Although not all areas showed uniform improvement, visible progress was evident in the prioritized zones near the training locations.

Behavioral Changes Among Key Community Actors One of the most important results was the behavioral shift among participants and local facilitators:

1. PKK members began promoting recycling and waste sorting within family routines.
2. Posyandu cadres used monthly gatherings to disseminate information on waste-related disease prevention.
3. Local leaders encouraged residents to store household waste in bins rather than dumping it in rivers or yards.

These micro-level behavioral changes contributed to a broader community response.

Following the intervention, participants proposed several follow-up efforts:

1. Formation of a village waste monitoring group led by PKK and Posyandu members.
2. Scheduled neighborhood cleaning activities at least once a month.
3. Planning informal partnerships with waste collectors to support waste transport.

These initiatives indicate growing ownership of environmental management at the local level.

CONCLUSION

The implementation of the community-based environmental empowerment program through social movements and the strengthening of local institutions in Sei Nagalawan Village resulted in several key outcomes. First, the training activities successfully generated strong enthusiasm and active participation from PKK members, Posyandu cadres, and local residents. This was reflected in their consistency in attending each session and their willingness to support program facilitation, indicating a positive community response to environmental initiatives. Second, the activities demonstrated strong potential for further development in improving waste management practices, village aesthetics, and environmental cleanliness. The emergence of ideas to establish innovative waste-based economic units shows growing community awareness that environmental management can contribute not only to health and cleanliness, but also to local economic opportunities, especially in the context of tourism development. The availability of natural resources further supports this potential. Third, the program strengthened local institutional roles in mobilizing environmental action. Training based on local resources proved effective in encouraging changes in knowledge, attitudes, and behavior, while simultaneously opening opportunities to increase household and institutional economic capacity. The involvement of PKK, Posyandu cadres, and village officials reinforced the development of a collective movement, signaling the rise of a community-driven environmental social movement. To ensure the sustainability of this initiative, multi-stakeholder support remains essential. Village governments need to continue facilitating and supervising community-based environmental activities. Universities can further contribute through knowledge transfer, mindset transformation, and mentoring in integrated social movement development. Meanwhile, regional governments, particularly the Serdang Bedagai Regency administration, are encouraged to position community-based waste management as a priority within rural development policies. Overall, this program illustrates that empowering communities through social movements and institutional strengthening can become an effective strategy for addressing environmental challenges while simultaneously building local capacity, economic value, and sustainable behavioral change.

REFERENCES

- [1] Agrawal, A., & Gibson, C. (2019). *Communities and the environment: Ethnicity, gender, and the state in community-based conservation*. Rutgers University Press.
- [2] Andriani, T. (2021). Community-based environmental awareness and participation in waste reduction. *Jurnal Pembangunan Berkelanjutan*, 9(2), 113–124.

- [3] Buhungo, Y. (2012). Kebersihan lingkungan dan perilaku masyarakat dalam kesehatan publik. *Jurnal Ilmu Lingkungan*, 6(1), 45–52.
- [4] Castells, M. (2015). *Networks of outrage and hope: Social movements in the Internet age*. Polity Press.
- [5] Chambers, R. (2014). *Rural development: Putting the last first*. Routledge.
- [6] Fahmi, I. (2020). *Kinerja organisasi dan manajemen publik*. Alfabeta.
- [7] Hakim, S., Nugroho, I., & Fitriani, D. (2020). Social movement for village-based waste reduction. *Journal of Environmental Action*, 4(1), 55–64.
- [8] Hidayat, R. (2017). *Belanja modal dan pembangunan daerah berkelanjutan*. Kencana Prenada Media.
- [9] Jumingan. (2018). *Analisis laporan keuangan sektor publik*. Bumi Aksara.
- [10] Kartika, R., & Hidayat, A. (2020). Institutional synergy in environmental community movements. *Jurnal Sosial Ekologi*, 12(3), 201–210.
- [11] Lestari, E. (2022). Strengthening local institutions in environmental governance. *Jurnal Pemerintahan Lokal*, 8(1), 33–42.
- [12] Mardiasmo. (2018). *Akuntansi sektor publik*. Andi Offset.
- [13] Ostrom, E. (2011). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- [14] Pranoto, D. (2020). Institutional collaboration in rural environmental programs. *Jurnal Pemberdayaan Komunitas*, 6(2), 89–98.
- [14] Rahmawati, S., Dewi, L., & Putra, H. (2021). Community-based environmental participation toward sustainable waste management. *Jurnal Ekologi Sosial*, 5(3), 144–157.
- [15] Sari, I., & Hudaya, N. (2021). Women's empowerment in local waste management initiatives. *Journal of Community Engagement*, 10(1), 72–81.
- [16] Sasongko, B., & Dewi, A. (2020). Informal environmental movements in Indonesian villages. *Jurnal Sosiologi Lingkungan*, 4(2), 98–107.
- [17] Sugiyono. (2020). *Metode penelitian kualitatif, kuantitatif, dan R&D*. Alfabeta.
- Tilly, C. (2004). *Social movements, 1768–2012*. Paradigm Publishers.