

Dynamics of local leadership and community asset mobilization in Makassar's community-based waste management program

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Abstract. The waste volume in Makassar City has escalated significantly, reaching over 1,500 tons per day due to changing consumption patterns. Amidst this crisis, community-based waste management programs are a vital solution, though their success is highly dependent on internal dynamics. This phenomenological study analyzes the central role of local leadership and the process of community asset mobilization in sustaining the program's continuity. Data were collected through in-depth interviews and observation, and thematically analyzed to uncover the meaning of the actors' experiences. Findings reveal that local leadership acts as a dynamic catalyst. Leaders mobilize assets by building strategic partnerships with various parties, including the government, CBOs, and the private sector. This collaboration is then operationalized through a structured division of roles and capacity-building programs, such as entrepreneurship and organizational development training, to ensure long-term sustainability. The study concludes that the core of the program's success lies in the leadership's ability to synergistically orchestrate internal and external assets, transforming them into an organized collective movement. Therefore, it is recommended that future support prioritizes strengthening leadership and community organizational capacity, rather than merely physical aid.

1 Introduction

Waste is a significant global issue [1]. It is a major contributor to greenhouse gas emissions, primarily in the form of methane (CH₄) and carbon dioxide (CO₂), which are key drivers of climate change. Climate change, in turn, affects the distribution of diseases caused by insects, which are among the primary vectors for zoonotic diseases, especially in tropical regions [2]. In 2022, it was recorded that 60% of infectious diseases originated from animals [3]. Furthermore, climate change exacerbates poor water quality and sanitation conditions, increasing the likelihood of food and waterborne disease infections [4].

This crisis manifests more acutely and complexly in the urban areas of developing countries [5]. The root of the problem is structural and institutional, extending beyond mere technical limitations. Major obstacles include inadequate infrastructure, financial and

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resource constraints, weak policy enforcement, a lack of political will, and poor inter-agency coordination [6]. Consequently, unsustainable practices such as open dumping and unsanitary landfills have become the norm. The infrastructure deficit is not the root cause but rather a consequence of strategic choices and governance models that are misaligned with local socio-economic realities [7].

In response to the failures of conventional, centralized, and top-down waste management systems, a paradigm shift towards Community-Based Waste Management (CBWM) has emerged. This approach positions the community as central actors, not merely as recipients of a service. CBWM is a participatory model that empowers local communities to be actively involved in the entire waste management chain, from source separation, collection, and processing, to recycling. In various developing countries, this model has proven effective in reducing the volume of waste transported to landfills by 30-50% [8].

Despite its vision of becoming a world-class city, Makassar City clearly reflects these challenges. In 2021, the daily waste generation in Makassar ranged from 868 to 1,023 tons. This figure has continued to surge, with daily waste volume reportedly exceeding 1,500 tons in 2024-2025 [9]. Amid the urgency to reduce the burden on its landfill, the Waste Bank Program in Makassar, which adopts the CBWM paradigm, has shown suboptimal performance. Of the approximately 800 Waste Bank Units (WBU) that were established, reports indicate that only around 200 remain operational. The Central Waste Bank's Technical Implementation Unit (UPTD), as the main facilitator, also reportedly failed to meet its waste purchasing targets, indicating low community participation and/or operational inefficiency [10].

In public discourse and government reports, a lack of public awareness is often scapegoated as the primary cause for the failure of waste management programs [11]. However, community participation does not emerge in a vacuum; it is highly dependent on enabling structural factors. These factors include the availability of supporting infrastructure (such as segregated waste bins and reliable collection schedules), the level of public trust in the existing system, and the presence of clear social or economic incentives [12]. Awareness and behavioral change tend to follow, rather than precede, the creation of a system that is functional, reliable, and provides tangible benefits to the community.

This indicates that CBWM must be understood as a socio-technical system, not merely a social movement. Although often born from grassroots initiatives, the sustainability of programs like Waste Banks heavily depends on the synergy between social components—such as social trust, leadership, and community knowledge—and physical infrastructure and technology. More crucially, their long-term viability is determined by their level of integration with the larger, formal waste management system [13]. Without a guarantee of offtake for recycled materials by industry or the municipal government, Waste Banks are vulnerable to market price fluctuations and volunteer burnout. Therefore, the effectiveness of CBWM lies in the synergy between bottom-up community action and consistent top-down support from the government [10].

Within the CBWM socio-technical ecosystem, two key elements often determine the difference between success and failure: local leadership and the ability to mobilize community assets [14]. The scientific literature consistently shows that the effectiveness of community-based environmental management is highly dependent on the presence of capable local leaders [15]. These are individuals who can inspire a shared vision, build trust, empower community members, and act as agents of change. These leaders serve as a bridge connecting the community to external resources (government, private sector, NGOs) and actively build social capital within the community.

This concept of leadership synergizes strongly with the Asset-Based Community Development (ABCD) approach. Pioneered by Kretzmann and McKnight, ABCD offers a radical philosophical shift from conventional development models, which focus on problems

and deficiencies (a needs-based approach), to a model that identifies, values, and mobilizes the strengths and assets already present within a community. In the ABCD framework, assets are not just financial resources but encompass a broad spectrum: the skills and talents of individuals (human assets), social networks and trust (social capital), local organizations, physical infrastructure, and local knowledge and culture. Its fundamental principle is that sustainable development must grow from within, empowering people to become the architects of their own future, rather than passive recipients of external aid.

Although the importance of these two factors—local leadership and asset mobilization—has been recognized separately, a gap in understanding remains regarding how the dynamics or interaction between them specifically operate in the context of waste bank programs in an urban setting like Makassar City. Existing research on this issue has tended to focus on single factors in isolation, such as the analysis of the technical-operational aspects of Waste Banks, the level of public awareness, or the general evaluation of program performance from a public administration perspective [10]. However, few studies have delved deeply into the underlying social processes that drive these dynamics. Therefore, this research aims to conduct an in-depth analysis of these dynamics to identify the patterns of interaction that contribute to the success and sustainability of community-based waste management programs.

2 Methods

2.1 Data Collecting

This qualitative study was conducted at two Waste Bank Unit (WBU) locations in Makassar City: the Al-Bury Waste Bank and the Baji Pamai Waste Bank. These two locations were selected because they represent a successful and sustainable WBU in Makassar City through the USAID Clean Cities Blue Ocean (CCBO) program. Furthermore, their selection also represents two distinct regional characteristics of Makassar City: an urban area and a suburban area, each with different community characteristics. Informants were then purposely selected based on their role in, and knowledge of, waste management.

Data was collected between November and December 2023. Primary data were collected through In-Depth Interviews with research participants. Participants were asked to describe all dimensions of their experiences related to the empowerment process and obstacles in the field. Furthermore, observations were conducted on the environment around the informant, such as waste bank facilities and infrastructure, and scheduled activities, such as transactions at the WBU (procedures and administration). Apart from the primary data, secondary data in the form of WBU legal documents and other documents used at the WBU were also collected. Table 1 lists the stakeholders involved in this study.

Table 1. Number and Categories of Research Informants

Stakeholders	Category	Amount
Village Head	Government	Two persons
WBU/RW/RT administrators	Public	Six people
Waste Bank Customers	Public	Ten people
CCBO Program Companion	NGO/CSO	Two persons

2.2 Data Analysis

A thematic analysis was performed on the interview transcripts. The information obtained was analyzed to explore this in more depth. This was followed by coding and creation of themes based on the collected data. This method establishes conclusions and develops a more vivid and appropriate interpretation of the phenomena.

The analysis stage begins with the introduction of data, namely, transcribing the data, rereading the data, and recording initial ideas. The main ideas are highlighted and written for each transcript. Next, codes were assigned systematically to the entire dataset and the relevant data were grouped with each code. Each theme was coded as a keyword that represented a particular idea when translating and transcribing it. The data were then re-read several times to narrow down the number of codes and categorize them into several central themes. In the final stage of the analysis, conclusions were drawn based on several vital statements/themes representing the data. The resulting data in this research are in the form of statements of ideas and feelings and visual representations depicted using interconnections between codes, which will be explained in the research results section.

3 Result and Discussion

The findings of this research present a community-based waste management model in Makassar whose success is rooted in the interaction between two fundamental elements: distributed local leadership and the strategic mobilization of community assets. More than just an initiative that invites conventional public participation, this model represents a governance framework wherein local leaders proactively identify, activate, and leverage the community's internal assets—primarily human and social capital—by utilizing external resources obtained through multi-stakeholder partnerships. This analysis directly addresses the chronic challenges in urban waste management in Indonesia, including Makassar, which are often hindered by low public participation, minimal awareness, and weak synergy among the government, community, and private sector. The model examined here offers a potent antithesis, demonstrating how effective local leadership can transform the governance landscape from a restrictive one to a supportive one.

3.1 Collective Leadership as a Driver of Multi-Stakeholder Partnerships

The partnership model identified in this study involves international donors (USAID), government agencies at various levels (Sub-district, Environmental Agency), civil society organizations, and private entities (Yayasan Lestari Mulia, Waste4Change, PT. Million Limbah Indonesia), as well as other short-term partners. This reflects the Public-Private-Community Partnership (PPCP) paradigm, which is gaining global recognition. Such partnerships are considered a vital solution to address the ineffective waste management prevalent in cities across developing nations. The failure of governments to independently provide services—due to budgetary constraints, technical capacity, and limited reach—has necessitated collaborative models that can pool resources and expertise from various sectors.

Empirical validation of the effectiveness of this PPCP model can be found in a case study in Bangkok, Thailand. Research there indicated that 87.2% of respondents believed that multi-stakeholder partnerships were a crucial factor for the success of the waste management system. The findings from this study, therefore, provide robust field evidence that aligns with this global trend, confirming that a well-defined multi-stakeholder partnership structure is a

foundational element for achieving sustainable waste management. The involvement of diverse actors, from the grassroots to the international level, not only brings financial and technical resources but also confers the political and social legitimacy essential for the program's acceptance and success.

The positioning of the WBU management and the community as the primary decision-makers and technical-operational implementers is a manifestation of collective leadership at the grassroots level. They are not merely beneficiaries but are autonomous agents directing the course of the program. The government's role as a provider of policy and administrative support, and the NGO's role as a facilitator and mentor, do not constitute top-down interventions. Instead, they are support services accessed and utilized by these local leaders. This dynamic is consistent with a collaborative governance framework, where facilitative leadership and inclusive institutional design are key to uniting various stakeholders toward a common goal. Thus, this multi-stakeholder partnership functions as a mechanism that enables local leaders to overcome their internal resource limitations and access a broader pool of assets for the community's benefit.

This structure directly addresses one of the most commonly identified governance challenges in the literature: overlapping jurisdictions and institutional fragmentation, which often impede the implementation of waste management policies at the municipal level in Indonesia. When roles and responsibilities are unclear, programs tend to suffer from implementation paralysis, inter-agency conflicts, and, ultimately, low community participation. Conversely, a clear division of roles, as demonstrated in this model, builds accountability, enhances operational efficiency, and strengthens the sense of ownership among all involved parties. To visualize this complex collaborative architecture, table 2 presents a mapping of the roles and responsibilities of each key stakeholder.

3.2 Human Resource Capacity Development as a Core Community Asset

A key mechanism of this model is the mobilization of the community's most fundamental asset: its human resources. This strategy is realized through a structured capacity-building program, particularly via the Training of Trainers (ToT) model. This approach strategically shifts the dynamic from a dependency on external experts to internal self-sufficiency. Its primary advantage lies in its ability to create a cascading effect. The initial participants who are trained become not only practitioners but also new trainers for their peers in the community. Each trained group subsequently has the capacity to train the next, allowing knowledge and skills to disseminate organically and autonomously throughout the community. This mechanism significantly reduces reliance on external trainers and inherently builds the program's sustainability from a human resource perspective.

The training program, which covers aspects of waste management, entrepreneurship, and organizational development, demonstrates that this asset mobilization extends beyond mere technical skills. It is a process of holistic empowerment. By equipping residents with entrepreneurial skills, the program directly mobilizes the community's economic potential, shifting the paradigm from waste as a problem to waste as a resource. Organizational development training empowers local leaders with the managerial capacity to professionally manage the WBU, negotiate with partners, and plan for the future.

Without systematic capacity building, the central role assigned to the community as decision-makers risks becoming mere symbolic participation or tokenism. The literature on participatory governance often highlights how asymmetrical power relations hinder meaningful participation, where communities, due to a lack of technical knowledge or organizational capacity, cannot genuinely influence decisions. Thus, capacity building is not

merely a supporting activity but the primary engine that drives the mobilization of community assets as a whole.

Table 2. Typology of Stakeholder Roles and Responsibilities in the Community-Based Waste Management Program

Category: Specific Actor	Primary Role	Key Contributions	Key Relationships
Community: Waste Bank Unit (WBU), PKK & LPM boards, Residents	Operational Implementer & Local Level Decision-Make	Waste collection and sorting, daily WBU operations, mobilization of resident participation, collective decision-making.	Active participation, program ownership, direct interaction with CSO facilitators.
Government: Environmental Agency (DLH), Sub-district Office	Policy Enabler & Administrative Facilitator	Regulation, permits, policy support, integration into city plans, provision of motivators/technical assistants.	Vertical and horizontal coordination, provision of formal legitimacy, oversight.
CSO/Private Sector: Yayasan Lestari Mulia, Waste4Change, PT. Million Limbah Indonesia	Facilitator, Capacity Builder, & Value Chain Connector	Technical & managerial training (ToT), behavioral change support, curriculum development, linkage to recycling markets.	Intensive mentoring, reporting to donors, mediation between government and community.
Donor Agency: USAID	Funder & Provider of International Legitimacy	Seed funding, provision of program framework, transfer of knowledge and best practices.	Program oversight, impact evaluation, relationship with implementing partners (CSOs).
Other Partners: YBM BRI, Pegadaian, Universities	Provider of Additional Resources & Expertis	Short-term financial support, provision of resources (e.g., equipment), research and development, student involvement.	Project-based collaboration, knowledge transfer, specific capacity building.

This holistic approach is the foundation of community ownership, which is widely recognized as the most crucial factor for ensuring long-term participation and the sustainability of development programs. When a community feels a sense of ownership over a program, its members are more motivated to contribute, solve problems, and ensure its continuity. Furthermore, this empowerment process fundamentally transforms the community's perception of its role, shifting from being passive recipients of services or aid to becoming active agents in their own local development. This transformation is fully aligned with the ultimate goal of sustainable development: to empower communities to determine and manage their own futures.

3.3 The Key Role of CSOs as Facilitators of Asset Mobilization

Within this dynamic, Civil Society Organizations (CSOs), such as Yayasan Lestari Mulia and Waste4Change, play a crucial role as intermediaries or facilitators of asset mobilization.

They function as a bridge connecting local leadership with complex external resources. This intermediary role is vital in the context of developing countries, where there are often wide communication gaps, historical distrust, and differences in work culture between government institutions and local communities. CSOs, often being more trusted by the community, can build bridges of trust, translate the language of policy into tangible action, and facilitate productive and equitable dialogue among all parties.

Simultaneously, CSOs act as risk absorbers. Grassroots community organizations often lack the administrative capacity to navigate complex bureaucratic procedures, manage large grants, or prepare formal reports that meet donor standards. The presence of established CSOs like Yayasan Lestari Mulia and Waste4Change provides a credible legal entity that can receive funds, sign contracts, and fulfill formal reporting obligations. They absorb this administrative burden, allowing the WBU to focus on its core operational tasks. This intermediary role also absorbs political risk. If the program faces challenges or failures, the CSO can negotiate with the government or donors, shielding community leaders from direct political pressure. Therefore, CSOs enable the core partnership between the state and the community to function without being hampered by administrative and political friction. This function is a key success factor that is often missing in failed public-private partnership models.

The CSOs' other role as facilitators of mentorship and architects of behavioral change strategy can be analyzed more deeply through the lens of social learning theory. Their approach is not limited to a one-way transfer of technical knowledge. Instead, they create and nurture dialogical spaces where the community can collectively reflect on their problems, participate in designing solutions, and collaborate on implementation. This process allows the community to learn from their own experiences, adapt to emerging challenges, and gradually internalize new norms and practices related to waste management.

This is a fundamentally more profound and sustainable approach compared to conventional awareness campaigns. Such campaigns, which are often top-down, purely informational, and non-participatory, have frequently proven ineffective in producing lasting behavioral change. By facilitating a social learning process, CSOs help build adaptive capacity and a sense of collective ownership within the community, which are the foundations of sustainable change that is deeply rooted in the local social context.

3.4 Designing Sustainability: The Institutionalization of Mobilized Assets

A successful empowerment program is measured not only by its short-term achievements but by its ability to sustain and grow independently after external intervention ceases. The sustainability strategy designed within this program can be seen as the final stage of the asset mobilization process: institutionalizing and securing the assets that have been built for the long term. Each aspect of this sustainability strategy aims to ensure that the value created is not lost after the initial intervention ends.

The effort to find long-term partners for the WBU's product value chain is a strategy to institutionalize the mobilized economic assets. Instead of viewing waste merely as a problem to be disposed of, this approach fundamentally shifts the waste management paradigm from a cost center to a revenue stream. This strategy directly addresses one of the largest and most common obstacles in waste management in developing countries: high dependency on government budgets that are often severely limited and unpredictable. This financial self-sufficiency lays a solid foundation for long-term sustainability.

In response to operational needs, equipment procurement was designed to be user-friendly for the WBU management. This demonstrates a mature understanding of the importance of appropriate technology in the context of community-based development. This

approach consciously avoids the "technology trap," where the introduction of sophisticated, expensive, or complex equipment backfires because the local community lacks the technical capacity or financial resources to operate and maintain it. Equipment that matches the local skill level and conditions ensures that the community possesses technological assets that can be operated, maintained, and even replicated independently. This not only guarantees the functional sustainability of the program's technical aspects but also strengthens the community's autonomy and self-confidence in managing its own technology.

Beyond economic and technological assets, institutionalizing the legitimacy and role of the WBU within the city's formal governance system is the most strategic step toward fostering the sustainability of the community-based program. This effort includes advocating for the WBU to be prioritized in municipal waste management policies and maximizing the mentorship role of motivators from the Environmental Agency (DLH). Integration into the city's formal policy framework is a decisive success factor that can transform a successful pilot project into a permanent and integrated part of the overall municipal waste management system.

This step ensures that the program will not vanish or lose momentum when funding from the initial donor ends—a fate that unfortunately befalls many promising development projects. Case studies in Indonesia show that a supportive national regulatory framework, such as Law No. 18 of 2008 on Waste Management and its derivative regulations, provides a strong legal foundation for initiatives like Waste Banks. However, effective and sustainable implementation on the ground is highly dependent on synergy and integration with policies at the regional level. By advocating for this policy integration, the program proactively builds a bridge between grassroots innovation and formal government structures, which is key to achieving widespread and lasting impact.

4 Conclusion

This research demonstrates that the success of a community-based program hinges on the dynamics of local leadership in mobilizing internal and external assets. Effective leadership, embodied by the WBU and community figures, serves as the linchpin that drives the entire system. They actively leverage multi-stakeholder partnerships to attract external resources while simultaneously mobilizing their greatest assets—human and social capital—through structured empowerment programs.

These findings suggest the importance of a holistic and sustainability-oriented program design from the outset. A successful intervention must place capacity building at the core of its strategy, not as an additional component. Furthermore, a paradigm shift in the role of government is required. Instead of focusing exclusively on direct service provision, the government can achieve more effective and sustainable outcomes by adopting the role of a facilitator and enabler of the broader waste management ecosystem.

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