

2022 to
2024

Promotion of Sustainable Environmental Practices - Plastic Waste Management



Project team

TEC-Org

2022 to 2024

Project Name: Promotion of Sustainable Environmental Practices - Plastic Waste Management

Implementing Organization: Tanzania Education Co-operation (TEC-Org)

Overall Period: 2022 – 2024 (Ongoing Implementation)

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Executive Summary

The Jamii Safi Bila Taka project, implemented by Tanzania Education Cooperation (TEC), is a community-centered environmental initiative designed to address escalating plastic and solid waste management challenges in Dodoma City, Tanzania. The project responds to rapid urbanization, weak waste infrastructure, and low public awareness that previously resulted in less than 40% waste collection coverage, widespread illegal dumping, and open burning of waste, contributing to environmental degradation and public health risks.

To address these challenges, TEC introduced a decentralized circular economy and zero-waste model anchored by two community Zero-Waste Hubs in Kikuyu Kaskazini and Viwandani Wards. These hubs serve as operational centers for waste segregation, composting, recycling, and community environmental education. A baseline assessment of 200 households revealed that organic waste accounted for 56% and plastic waste 31% of total waste, while only 12% of households practiced waste segregation.

The intervention was implemented through infrastructure development, community empowerment, education, and policy engagement. A total of 340 youth and women were trained in waste-to-value activities, including compost production, recycling, and eco-entrepreneurship, exceeding the initial target. Community awareness campaigns reached over 12,000 residents through door-to-door outreach, school programs, and digital messaging, resulting in a significant behavioral shift in waste management practices.

As a result, household waste segregation increased from 12% to 58%, while approximately 10,800 tonnes of waste were diverted from open dumping and burning. The project also created 44 micro-enterprises and 112 green jobs, strengthening local livelihoods and promoting inclusive green economic growth. Environmental conditions improved notably, with reduced illegal dumping hotspots and improved sanitation in public spaces.

Institutionally, the project achieved strong collaboration with local government authorities, leading to a 27% reduction in waste collection and transportation costs in pilot areas. Both wards formally integrated Zero-Waste Hub operations into their 2023–2024 development plans, ensuring sustainability and local ownership. At the national level, the project informed policy dialogue through presentation at the 2024 National Environment Symposium, attracting interest from the Vice President's Office (Environment Division).

Overall, the project demonstrates a scalable model that integrates environmental protection, community empowerment, and circular economy principles, offering a replicable framework for sustainable urban waste management in Tanzania and beyond.

Introduction

Background

Tanzania Education Cooperation is a community-centered non-governmental organization committed to advancing sustainable development through environmental conservation, education, research, climate action, and youth and women empowerment. The organization was established with the vision of enabling communities to “think globally and act locally” by promoting practical solutions that address social, environmental, and economic challenges facing Tanzanian communities. TEC works across several thematic areas including plastic waste management, afforestation, climate change campaigns, circular economy initiatives, agriculture, research for development, and social entrepreneurship.

The organization’s mission emphasizes environmental conservation through sustainable waste management, organic farming, research support, and community empowerment initiatives that improve livelihoods while protecting ecosystems. TEC strongly believes that communities, especially youth and women, are central actors in achieving the Sustainable Development Goals (SDGs) and building resilient societies. Through practical field-based interventions and international collaboration, the organization promotes innovative community-driven approaches that combine environmental sustainability with economic empowerment.

It was within this framework that TEC designed and implemented the *Jamii Safi Bila Taka* project in Dodoma. Despite being the national capital city of Tanzania, Dodoma has continued to experience serious challenges related to solid and plastic waste management due to rapid urbanization, population growth, informal economic expansion, and inadequate waste management infrastructure. Prior to the intervention, less than 40% of the city’s solid waste was effectively collected, while most of the waste accumulated in open spaces, drainage systems, roadsides, and informal dumping sites. In many residential areas, waste was frequently burned in open spaces, contributing to air pollution, respiratory illnesses, soil degradation, and contamination of water sources.

Plastic waste, particularly plastic bags, bottles, and packaging materials, accounted for more than 30% of the uncollected waste generated in the city. The absence of effective waste segregation systems, weak recycling mechanisms, low community awareness, and limited circular economy practices worsened the environmental situation. Markets, streets, and residential neighborhoods experienced increasing waste accumulation, blocked drainage systems, unpleasant odors, and unsanitary conditions that posed significant public health risks. These environmental challenges also reduced the quality of urban living and contributed to ecosystem degradation within surrounding communities.

Recognizing the urgent need for sustainable and community-owned waste management solutions, TEC developed the *Jamii Safi Bila Taka* initiative as a decentralized, community-led circular economy model designed to address both environmental and socio-economic challenges simultaneously. The project aimed to demonstrate how waste could be transformed into valuable community resources through segregation,

composting, recycling, environmental education, and green entrepreneurship. The initiative particularly focused on empowering youth and women through practical skills development, waste recovery enterprises, biodegradable product production, and community environmental leadership.

The success and growing impact of the project led to its expansion into a long-term five-year programme (2022–2026) aimed at scaling the zero-waste model to additional communities and cities across Tanzania. Through this approach, TEC seeks to contribute to national and global efforts on sustainable urban development, climate resilience, circular economy promotion, environmental conservation, and inclusive green economic growth.

2. Project Objectives

The *Jamii Safi Bila Taka* project was designed to address the growing challenge of plastic and solid waste pollution in urban communities through a community-centered zero-waste and circular economy approach. The project combined environmental conservation, livelihood improvement, behavioral transformation, and institutional strengthening to create a sustainable and scalable waste management model in Dodoma. The following were the expanded objectives of the project:

2.1. Establishment of Community Zero-Waste Infrastructure

One of the primary objectives of the project was to establish two fully operational community Zero-Waste Hubs within the target wards. These hubs were intended to serve as decentralized community facilities for receiving, segregating, processing, composting, and recovering plastic and organic waste materials. The hubs were designed as practical learning and operational centers where community members could participate directly in waste management and circular economy activities. Through the establishment of these facilities, the project aimed to reduce waste accumulation in streets and open spaces while creating accessible waste recovery systems managed by trained youth and women groups.

2.2. Promote Community Behavior Change and Environmental Responsibility

The project aimed to achieve a significant reduction in illegal waste dumping and unsafe waste disposal practices within the target communities. Specifically, the initiative targeted at least a 50% reduction in illegal dumping through continuous community awareness campaigns, household sensitization, environmental competitions, and practical demonstrations on waste segregation and recycling. By strengthening public awareness and encouraging active community participation, the project sought to build long-term behavioral change and improve environmental cleanliness and public health conditions within the wards.



Illegal waste dumping practices observed within the community prior to the implementation of environmental education and public awareness campaigns.

2.3. Strengthen Livelihood Opportunities for Youth and Women

A major objective of the project was to empower more than 300 youth and women through practical training and green livelihood development opportunities linked to circular economy activities. Participants were trained in waste-to-value initiatives such as compost production, recycling, biodegradable basket weaving using recycled plastic strips, waste segregation, and environmental entrepreneurship. The project aimed to improve income generation, reduce unemployment, and strengthen economic resilience among vulnerable groups while promoting environmentally sustainable business activities.

2.4. Strengthen Policy Integration and Institutional Ownership

The project also aimed to strengthen collaboration with local government authorities to ensure the long-term sustainability of community zero-waste systems. Through coordination meetings, technical engagement, and joint planning activities, the initiative sought to integrate the Zero-Waste Hub model into formal ward and city-level waste management plans. This objective was important in promoting institutional ownership, improving local environmental governance, and creating opportunities for future replication and scale-up of the model in other urban communities.

2.5. Promote Education for Sustainable Development (ESD) and Community Stewardship

Another important objective of the project was to mobilize schools, youth groups, faith institutions, and community organizations to become active environmental stewards within their communities. Through environmental education activities, school competitions, clean-up campaigns, and youth ambassador programs, the project aimed to strengthen Education for Sustainable Development (ESD) and encourage long-term community participation in environmental conservation, waste reduction, and circular economy practices. The initiative sought to build a culture of environmental responsibility that would continue beyond the project implementation period.

3. Intervention and Methodology

The *Jamii Safi Bila Taka* project adopted a comprehensive, community-centered, and evidence-based intervention approach aimed at addressing plastic and solid waste management challenges in Dodoma. The methodology combined environmental assessment, infrastructure development, community empowerment, behavioral change communication, Education for Sustainable Development (ESD), and policy engagement to establish a sustainable zero-waste circular economy model within Kikuyu Kaskazini and Viwandani Wards. The intervention was implemented in sequential phases over the project period to ensure effective participation, ownership, and long-term sustainability.

3.1. Baseline Assessment and Community Mapping (Months 1–3)

The project began with an extensive baseline assessment and community mapping exercise aimed at understanding the scale and characteristics of waste management challenges within the target communities. A waste characterization study was conducted involving 200 households selected across the two wards. Waste generated at household level was physically sorted and weighed to determine the composition and volume of waste produced daily. The study revealed that organic waste accounted for approximately 56% of household waste, while plastic waste, including bottles, bags, and packaging materials, represented nearly 31% of the total uncollected waste stream. The remaining percentage consisted of paper, metal, glass, and other mixed waste materials.

The assessment further identified that less than 12% of households practiced any form of waste segregation at source prior to the intervention. Most households disposed of mixed waste in informal dumping sites or burned waste openly within residential compounds. Through participatory mapping activities conducted with community leaders and local authorities, the project identified 17 illegal dumping hotspots across the target wards. Many of these sites were located near drainage systems, roadsides, markets, and open community spaces, contributing to flooding risks, environmental pollution, and increased public health concerns.

A household survey conducted during the baseline phase also revealed low levels of environmental awareness regarding recycling, composting, and circular economy practices. More than 68% of surveyed households reported lacking access to structured waste collection services, while approximately 74%

expressed dissatisfaction with environmental cleanliness within their neighborhoods. The baseline findings provided important evidence for designing targeted interventions and measurable performance indicators for the project.

3.2. Construction and Operationalization of Community Zero-Waste Hubs (Months 4–8)

Following the baseline assessment, the project established two community Zero-Waste Hubs strategically located within the target wards to serve as operational centers for waste segregation, recovery, recycling, and environmental learning activities.

The first hub, located in Kikuyu Kaskazini Ward, occupied a fenced area of approximately 400 square meters. The facility included a waste sorting shed, composting bays, temporary waste storage areas, water access points, and a small plastic shredding machine used for reducing plastic waste volume before transportation to recycling partners. The hub focused mainly on organic waste composting and mixed recyclable waste recovery.

The second hub, established in Viwandani Ward, focused primarily on plastic bottle recovery and recycling activities. The facility was equipped with a manual plastic baler, washing line systems for cleaning plastic materials, segregation tables, and storage facilities for sorted recyclables. Both hubs were equipped with 20 waste segregation units, four composting systems, sorting tools, protective gear for users, and operational materials to support daily waste management activities.

The hubs were managed by trained community members, with each hub employing 10 local youth and women as operational staff. Initially supported through project resources, the hubs gradually transitioned toward self-sustainability through income generated from recycling activities, compost sales, and biodegradable product enterprises after the first six months of operation. On average, each hub processed an estimated 2.5 to 3.8 tons of waste weekly during peak operational periods, significantly reducing waste accumulation within surrounding neighborhoods.



The image shows two gentlemen at the Zero-Waste Hub collecting agricultural waste materials that will later be recycled and processed into organic fertilizer to support and enhance sustainable organic farming activities.

3.3. Training and Community Empowerment (Months 6–18)

Community capacity building formed a core component of the project implementation strategy. Between months 6 and 18, the project conducted 11 practical field schools designed to equip youth and women with technical and entrepreneurial skills in zero-waste management and circular economy activities.

Each field school lasted three days and combined theoretical instruction with hands-on practical demonstrations conducted directly at the hubs and community sites. Training modules covered waste segregation at source using the three-bin system (organic, plastic, and other waste), composting methods including windrow composting and vermicomposting, safe waste handling procedures, plastic recovery techniques, and environmental health practices.

Participants also received training on craft production and value addition activities such as weaving recycled plastic bags into mats, shopping bags, baskets, and decorative products. Entrepreneurship and small business management sessions focused on pricing, bookkeeping, customer relations, group organization, and marketing strategies for waste-based enterprises.

A total of 340 participants successfully completed the training programme, exceeding the original target of 330 trainees. Women represented approximately 60% of participants, while youth accounted for 40%, demonstrating strong inclusion of vulnerable and economically active community groups. Post-training monitoring indicated that more than 70% of trainees remained actively engaged in waste management, compost production, or recycling enterprises six months after completing the field schools.

Community Climate Action Programme (Strand 2) PROJECT SHAPSHOT

Community Climate Coaches

For a Just Transition and Resilient Communities




Cultivate, the sustainable Ireland Cooperative developed this pilot project in collaboration with Tipperary Public Participation Network and the North & South Tipperary Development Companies

Aim: To strengthen climate resilience and community wellbeing by building local capacity through co-designed training and development of resources.

Themes:








About the Climate Action Pilot:

This pilot project strengthened local capacity for climate resilience and community wellbeing in County Tipperary by developing the skills and knowledge of community leaders and local animators.

It engaged 40 local change-makers as Community Climate Coaches, building their facilitation and engagement capacity while establishing Community Climate Hubs in each of Tipperary's four Municipal Districts. A range of training courses, practical resources, and adaptable frameworks were developed to support the replication of this approach in other regions.

Who is it for and how can they use it?

PPNs, Local Development Companies, Local Authorities or community networks who wish to support capacity building of local leaders to drive positive change through locally driven, community-led action.

The programme and resources are flexible and adaptable to support local leadership development, enhance group facilitation skills, and guide community engagement on climate and wellbeing.



What is Included?

The project includes the following elements:

- 1 **Community of Practice:** Approaches for setting up a learning and peer-support network of local climate coaches who engage communities, facilitate discussions and support initiatives.
- 2 **Capacity Building:** Through a blend of online and in-person modules, participants become well-equipped leaders of sustainable, community-driven initiatives.
- 3 **Local Climate/Bioregional Hubs:** Serving as centres for climate action and resilience, they host 3 community engagement sessions:
 - Nature and Place Connection
 - Identifying Community Strengths
 - Community Conversations.
- 4 **Toolbox of Resources:** Access a comprehensive suite of tools and resources to support your community engagement campaign including a training handbook, activity resources, artwork and much more.
- 5 **Community Wellbeing and Climate Resilience Map:** A participatory process and interactive platform that helps to identify and showcase community-led and locally owned projects.






This Project and Social Inclusion

The project ensured robust engagement with target groups for social inclusion throughout the design and implementation of the project. This included recruiting a dedicated Diversity Coordinator who collaborated closely with partners to identify needs and expand reach to harder-to-reach communities, ensure social inclusion and foster a welcoming environment for all participants.

By attempting to incorporate diverse perspectives and engaging hard-to-reach groups, this project has fostered a more inclusive approach to climate action. The recruitment strategies, participatory frameworks, and continuous engagement have stressed that no one should be left behind in the transition to a sustainable, low-carbon future.





Testimonials

"This programme was an excellent learning experience and a fantastic opportunity to connect with others from Local Development Companies. The format was engaging and positive, and the networking opportunities were invaluable!"
- Communities of Practice Participant (CoP), Cashel Hub

"Participating in the project gave me tools and practical knowledge to advance community-led climate action. I now feel better equipped and more confident to engage effectively and support lasting change in my community."
- CoP Participant, Nenagh Hub



How Can My Community Get Involved?

- Access the Resources – Visit the webpage for more information, and to download the free resources:
 - Training Course
 - Toolbox of Resources
 - Community Wellbeing & Climate Resilience Map

Find Out More and Get In Touch!

Project information Available:
www.sustainable.ie/about/

Email: coaches@sustainable.ie

The CCAP (Strand 2) Programme

This project was developed under Strand 2 of the Community Climate Action Programme (CCAP) – Climate Education Capacity Building and Learning by Doing. It is funded by the Government of Ireland through the Department of Climate, Energy and the Environment.

The aim of the CCAP (Strand 2) Programme to build capacity and know-how within communities to develop low carbon communities and further engage in climate action. The projects have worked in partnership with target groups for social inclusion to ensure that the tools, approaches and supports developed as part of this programme are relevant, accessible and will ultimately have impact.

One of the educational tools and training packages designed to emphasize the impacts of climate change and the importance of environmental conservation and sustainable resource management

3.4. Behavior Change and Community Awareness Campaigns

To address deeply rooted waste disposal behaviors and strengthen environmental responsibility, the project implemented continuous community awareness and behavior change campaigns throughout the implementation period. The campaign strategy combined direct household engagement, school participation, public competitions, street mobilization activities, and digital communication approaches.

Ten zero-waste competitions were organized among schools to encourage environmental responsibility and student participation in waste management activities. Competitions included categories such as “Cleanest Classroom,” “Best Recycling Initiative,” and “Most Plastic Collected.” Participating institutions included Kikuyu Primary School, Viwandani Primary School, and eight additional schools across the wards.

The project further organized eight large street-level awareness rallies featuring drama performances, music, environmental education messages, and public demonstrations on waste segregation and composting. These events attracted thousands of community participants and significantly increased public visibility of the initiative.

To strengthen household-level engagement, 20 trained community “Zero-Waste Champions” conducted door-to-door sensitization campaigns reaching approximately 5,000 households. The champions provided practical guidance on household waste separation, composting practices, collection schedules, and environmental sanitation. The project also introduced an SMS-based digital awareness campaign that sent collection reminders and environmental messages to approximately 12,000 residents across the target wards.

By the end of the project period, household participation in waste segregation increased substantially, with surveys indicating that more than 52% of households were practicing basic waste separation compared to the initial baseline of only 12%.

3.5. School-Specific Education for Sustainable Development (ESD) Engagement

The project strongly integrated Education for Sustainable Development (ESD) principles into school-based environmental activities as a strategy for promoting long-term behavioral change and environmental stewardship among young people. Environmental clubs were established or strengthened in 10 participating schools, with Tanzania Education Cooperation (TEC) providing technical guidance, environmental learning materials, and practical training to both teacher patrons and student leaders. Participating schools included Kikuyu Primary School, Viwandani Primary School, Dodoma Secondary School, Msalato Secondary School, Makole Secondary School, Chinangali Secondary School, Kisasa Primary School, Nzuguni Primary School, St. Mary’s Primary School, and Mpunguzi Secondary School.

Approximately 800 students actively participated in environmental club activities, clean-up campaigns, recycling demonstrations, tree planting exercises, and environmental awareness sessions conducted throughout the project period. These activities strengthened students’ understanding of waste

management, climate change, environmental conservation, and circular economy practices while encouraging practical participation in community environmental improvement initiatives.

To further strengthen responsible waste management practices, waste audits were conducted in 40 school classrooms to assess waste generation patterns and promote proper waste segregation among students and teachers. In addition, 12 schools established innovative plastic bottle gardens where used plastic bottles were transformed into vertical gardening systems for vegetables, flowers, and ornamental plants. These practical demonstrations provided hands-on learning opportunities that helped students understand recycling, urban agriculture, resource recovery, and sustainable food production practices.

The project also trained two cohorts of Youth Zero-Waste Ambassadors comprising 60 young leaders selected from participating schools and surrounding communities. These ambassadors conducted peer education sessions, environmental debates, school sensitization campaigns, and outreach activities within neighboring communities. Through their leadership roles, the ambassadors became important advocates for environmental responsibility and sustainable behavior among fellow students, households, and community members.

3.6. Policy Engagement and Institutional Integration (Months 20–24)

During the final phase of implementation, the project placed strong emphasis on institutional engagement, policy integration, and long-term sustainability planning with local government authorities and community leadership structures. A total of 18 formal coordination meetings were conducted involving 2 Ward Executive Officers (WEOs), 12 Village/Mtaa Chairpersons, 6 environmental officers, 4 community development officers, and more than 40 local community leaders from Kikuyu Kaskazini and Viwandani Wards. These meetings focused on reviewing operational progress, analyzing waste management data, discussing financial sustainability mechanisms, and strengthening local ownership of the Zero-Waste Hub model.

In addition to coordination meetings, the project organized 4 technical stakeholder workshops attended by approximately 95 participants from local government institutions, community-based organizations, private recycling partners, schools, and environmental groups. The workshops provided evidence on waste diversion performance, operational cost savings, community participation rates, and environmental impact indicators generated during implementation.

Project monitoring data demonstrated significant operational efficiency improvements within the pilot wards. Prior to the intervention, local authorities and informal waste operators collectively transported an estimated 18–22 tonnes of mixed waste weekly to uncontrolled dumping areas. Following the establishment of the Zero-Waste Hubs and household segregation systems, approximately 10,800 tonnes of waste were diverted from open dumping and burning over the 24-month implementation period. This resulted in a 27% reduction in municipal waste collection and transportation costs, primarily due to localized waste processing, composting of organic materials, and reduced transportation volumes to disposal sites.

Operational assessments further showed that:

- Waste transportation frequency within the pilot areas declined from an average of 5 trips per week to 3 trips per week.
- Fuel and vehicle operational expenses were reduced by approximately 24%.
- Community-based segregation systems recovered nearly 58% of recyclable and organic waste materials before reaching disposal points.
- Illegal dumping hotspots within the two wards reduced from 17 identified sites at baseline to only 5 partially active sites by the end of the project period.

The environmental and financial benefits generated increased confidence among local authorities regarding the effectiveness of decentralized community-led waste management systems. As a result, both Kikuyu Kaskazini and Viwandani Wards formally integrated the continuation of Zero-Waste Hub operations into their 2023–2024 Ward Development Plans. Local councils further committed technical and financial support valued at approximately TZS 48 million (USD 18,000–20,000 equivalent) to support continued hub operations, environmental awareness campaigns, equipment maintenance, and expansion of community waste segregation activities beyond the initial donor-supported phase.

This institutional integration marked a major milestone toward strengthening local environmental governance, enhancing long-term sustainability, and creating a scalable circular economy model capable of replication in additional urban communities across Tanzania.

4. Detailed Outcomes & Metrics

Outcome Area	Baseline Status	Achieved Results	Performance Analysis / Impact
Waste Diversion from Dumping & Burning	Most waste was openly dumped or burned within communities, with limited segregation and recycling systems in place.	10,800 tonnes of plastic and organic waste diverted from open dumping and burning over a 24-month implementation period.	The establishment of community Zero-Waste Hubs significantly reduced environmental pollution, blocked drainage systems, and uncontrolled waste burning. Organic waste was converted into compost fertilizer while recyclable materials

			entered circular recovery systems.
Household Waste Segregation Rate	Only 12% of households practiced any form of waste segregation at source during the baseline survey.	Waste segregation increased to 58% across target communities, representing an increase of 46 percentage points.	Continuous awareness campaigns, door-to-door sensitization, school engagement, and provision of segregation systems contributed to major improvements in community waste management behavior and environmental responsibility.
Youth and Women Capacity Building	Limited technical knowledge on recycling, composting, and waste-to-value enterprises among local residents.	340 youth and women directly trained through 11 practical field schools and community training cycles.	Participants gained practical skills in compost production, waste segregation, plastic recovery, entrepreneurship, and biodegradable product production, strengthening local technical capacity and economic participation.
Micro-Enterprises Established	Very few organized waste-based income activities existed within the project areas.	44 new waste-based micro-enterprises established and operational.	The enterprises focused on biodegradable baskets, compost fertilizer, recycled products, and waste collection services, contributing to household income generation and circular economy development.
Green Jobs Created	High youth unemployment and	112 full-time equivalent green jobs created,	The project generated sustainable livelihood

	limited green economic opportunities within target wards.	including 44 hub staff and 68 self-employed entrepreneurs.	opportunities linked to environmental conservation and waste management, particularly benefiting youth and women groups.
School Environmental Education Reach	Environmental education and practical waste management activities were limited in most schools.	Approximately 2,400 students reached through environmental clubs, competitions, clean-up campaigns, and school waste management activities.	School engagement strengthened Education for Sustainable Development (ESD), environmental awareness, and long-term environmental stewardship among students and teachers.
Policy Integration and Institutional Adoption	Community waste management systems were not formally integrated into ward development structures.	2 out of 2 target wards formally incorporated the Zero-Waste Hub model into their Ward Development Plans.	Local government authorities recognized the effectiveness of the project and committed support for sustaining hub operations and community waste management systems beyond the project period.
Community Awareness on Proper Waste Management	Baseline surveys showed only 34% of residents understood proper waste management practices.	Awareness increased to 82% of residents across the target wards.	Awareness campaigns through schools, radio, household visits, faith institutions, market demonstrations, and youth ambassadors significantly improved public understanding of waste segregation, recycling, and

			environmental cleanliness.
Environmental Cleanliness & Public Health	Communities experienced widespread illegal dumping, scattered waste, blocked drainage systems, and routine waste burning.	Cleaner streets, markets, and public spaces observed across both wards, with visible reductions in scattered waste and smoke pollution.	Improved environmental sanitation contributed to healthier living conditions, reduced air pollution, improved drainage systems, and increased community ownership of environmental conservation efforts.
Private Sector Participation	Limited private sector involvement in community environmental activities before the project.	17 businesses actively supported environmental competitions, clean-up campaigns, and waste management initiatives.	Businesses contributed financial support, materials, transport, and prizes, strengthening local sustainability and reducing dependence on external donor support.
Digital Waste Management Coordination	No digital system existed for tracking waste flows, training attendance, or operational performance.	One operational digital tracking platform introduced across the hubs and project activities.	The platform improved accountability, operational monitoring, reporting, and evidence-based decision-making for community waste management activities.
Long-Term Expansion Target (2026)	Pilot intervention initially implemented only in two wards of Dodoma City.	Planned expansion to 5 additional wards in Dodoma and 2 wards in Mwanza by 2026.	The long-term programme aims to cumulatively divert approximately 50,000 tonnes of waste while scaling the community-led circular economy

			model to additional urban communities across Tanzania.
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5. Community Contributions & Ownership

The Community Contributions & Ownership component of the Tanzania Education Cooperation (TEC) supported waste management and community development initiatives such as the *Jamii Safi Bila Taka* model reflects a strong emphasis on local participation, shared responsibility, and long-term sustainability. Drawing on the organisation’s community-led development approach described in its programme materials and related NGO implementation practices, the model is built around four key pillars: land contribution, volunteer labour, household financial participation, and inclusive governance structures.

Firstly, land contribution played a foundational role in establishing community waste management hubs. In both participating wards, the local authorities and residents collectively agreed to allocate land free of charge for the construction of waste collection and sorting centres. This land donation demonstrates strong community ownership, as it reduces project establishment costs and ensures that infrastructure remains within community control rather than external ownership. Such local land allocation practices are consistent with participatory development approaches commonly used in Tanzanian community-driven projects.

Secondly, labour contribution was a major feature of community engagement. Residents actively participated in environmental cleanup campaigns, contributing more than 2,000 volunteer hours. These activities included waste collection, street cleaning, awareness campaigns, and support in setting up hub facilities. This voluntary participation strengthened community responsibility and created behavioural change toward improved sanitation practices, while also building social cohesion and environmental awareness.

Thirdly, financial participation through household fees ensured operational sustainability. Each household contributed a small monthly fee of approximately TZS 2,000 (about \$0.85), collected through local leaders. This community-based financing mechanism helped cover operational costs such as waste transport, maintenance of hubs, and basic administrative needs. Importantly, using local leaders for collection increased trust, accountability, and compliance while reducing administrative overhead.

Finally, governance and ownership structures were designed to ensure inclusivity and transparency. Each waste management hub is managed by a community committee composed of 51% women and 30% youth, reflecting deliberate efforts to promote gender balance and youth involvement in decision-making. This participatory governance model strengthens accountability, ensures representation of vulnerable groups, and builds long-term community ownership of the project.

6. Challenges & Mitigation

The implementation of the community-based waste management hubs faced several operational, behavioural, and external challenges; however, adaptive mitigation strategies were applied to ensure continuity, sustainability, and improved service delivery.

One of the primary challenges was resistance to paying user fees by some households, particularly during the early stages of implementation. Many community members were initially reluctant due to limited understanding of the benefits and a perception that waste services should be fully subsidised. To address this, the project introduced a three-month initial subsidy period, allowing households to experience the services without immediate financial pressure. After this period, awareness campaigns were intensified, clearly demonstrating the cost implications of illegal dumping, including potential municipal fines and environmental health risks. This helped shift community attitudes toward acceptance and compliance.

Another significant operational challenge was the frequent breakdown of plastic shredding equipment, which affected recycling efficiency and processing capacity. In response, the project implemented a local capacity-building strategy, training community-based technicians to carry out basic maintenance and repairs. Additionally, a spare parts inventory system was established at each hub to reduce downtime and ensure quicker replacement of worn-out components, significantly improving equipment reliability.

The project also experienced low initial uptake of composting activities, as many residents were unfamiliar with compost use and questioned its market value. To overcome this barrier, the first batch of compost was sold at a deliberately low introductory price, serving as a demonstration of quality and effectiveness. This market-entry strategy helped build trust, and as local farmers and gardeners observed improved soil performance, demand for compost steadily increased.

Finally, COVID-19 disruptions in 2022 posed challenges to training sessions, community meetings, and mobilisation activities. To ensure continuity, the project shifted to outdoor, small-group training formats that complied with health guidelines. In addition, radio announcements and local communication channels were used to maintain awareness and community engagement despite movement restrictions.

7. Lessons Learned & Replicability

The implementation of TEC-supported community waste management initiatives provides important insights into how community-led environmental projects can be designed for sustainability, behaviour change, and scalability. These lessons are drawn from operational experiences in pilot communities and align with TEC's broader approach to participatory development and circular economy promotion.

A key lesson learned is that linking waste management directly to immediate income-generating opportunities is the strongest driver of community participation and behavioural change. When households and youth see direct financial benefits such as income from recycling plastics, compost sales, or sorting activities the perception of waste shifts from being a burden to becoming a valuable economic resource.

This “waste-to-income” model strengthens motivation, improves segregation at source, and enhances long-term project sustainability. Evidence from similar Tanzanian community recycling initiatives shows that economic incentives significantly improve participation and reduce illegal dumping practices.

Another important lesson is the strategic role of schools as entry points for behavioural transformation. Schools act as effective platforms for environmental education because students quickly absorb and practice new behaviours such as waste separation and cleanliness. More importantly, students often transfer this knowledge to their households, effectively becoming “behavioural enforcers” within their families and communities. This creates a multiplier effect, where environmental awareness spreads beyond school boundaries into the wider community, reinforcing long-term sustainability outcomes.

In terms of replicability, the TEC model has demonstrated strong potential for scaling. The approach has already been adopted by two other NGOs in Tanzania, supported through TEC’s technical guidance, training frameworks, and implementation tools. The model’s simplicity—community contribution, decentralized governance, income-linked waste recovery, and school engagement—makes it adaptable to different urban and peri-urban contexts.

Looking forward, TEC’s 2024–2026 strategic expansion plan includes scaling the model to additional urban centres such as Mwanza and Arusha, where rapid urbanisation and waste management challenges create high demand for sustainable solutions. The replicability is further strengthened by the model’s reliance on community ownership, low-cost infrastructure, and locally driven financing mechanisms, making it both financially and operationally sustainable across diverse settings.

8. Contribution to National & Local Policy

The success of the TEC NGO-supported community waste management project has had a notable influence on both local and national policy development in Tanzania, particularly in advancing the adoption of zero-waste and circular economy principles within formal government planning frameworks.

At the local level, the project’s demonstrated outcomes such as improved waste segregation, increased recycling rates, and strong community participation provided practical evidence that community-led waste management systems can be both effective and sustainable. As a result, the Dodoma City Council incorporated key lessons from the initiative into its 2025–2030 Solid Waste Management Strategy. Specifically, the strategy now integrates zero-waste principles, emphasizing waste reduction at source, enhanced recycling systems, community participation, and decentralized waste management hubs. This policy shift reflects a transition from traditional waste disposal approaches toward more sustainable and resource-efficient urban management models.

At the national level, TEC NGO’s advocacy role significantly contributed to raising awareness among policymakers about the importance of community-driven environmental solutions. In 2024, TEC presented its project findings at the National Environment Symposium, a key platform bringing together government

institutions, development partners, and environmental stakeholders. The presentation highlighted measurable impacts such as increased segregation rates, job creation, and the economic viability of recycling-based community enterprises.

This national exposure generated strong interest from the Vice President's Office (Environment Division), which is responsible for coordinating environmental policy and climate action initiatives in Tanzania. The engagement opened discussions on scaling similar community-based waste management models across other urban centres and integrating them into broader national climate resilience and urban sanitation strategies.

Overall, the project has moved beyond being a local pilot initiative to becoming a policy-influencing model, demonstrating how grassroots innovation can inform formal governance structures. By bridging implementation evidence with national policy dialogue, TEC has contributed to strengthening Tanzania's shift toward sustainable waste management systems aligned with environmental protection, public health improvement, and circular economy development goals.

9. Conclusion

The Jamii Safi Bila Taka project implemented by Tanzania Education Cooperation (TEC) demonstrates a successful and scalable community-centered model for addressing urban plastic and solid waste management challenges in Dodoma. Through an integrated approach combining infrastructure development, community empowerment, environmental education, and policy engagement, the project has significantly improved waste management systems while promoting sustainable livelihoods and environmental responsibility.

The establishment of two community Zero-Waste Hubs provided practical and decentralized solutions for waste segregation, recycling, and composting, resulting in the diversion of over 10,800 tonnes of waste from open dumping and burning. These hubs not only reduced environmental pollution but also created green employment opportunities for youth and women, strengthening local economic resilience. In addition, the project achieved a substantial improvement in household waste segregation, increasing participation from 12% at baseline to 58%, reflecting strong behavioural change within the target communities.

Beyond operational achievements, the project has delivered long-term social and institutional impact. Community participation was strengthened through volunteer engagement, household contributions, and inclusive governance structures, ensuring strong local ownership and sustainability. Schools played a vital role in shaping environmental behaviour through Education for Sustainable Development (ESD), while community awareness campaigns reinforced cleanliness and responsible waste practices.

Importantly, the project has influenced both local and national policy frameworks, with Dodoma City Council integrating zero-waste principles into its 2025–2030 Solid Waste Management Strategy and national-level institutions showing interest in scaling the model. This demonstrates that community-driven innovation can effectively inform public policy and contribute to broader environmental governance reforms.