

TANZANIA, ZANZIBAR CITY



POPULATION
219,007
Inhabitants (2022 estimates)

Decentralized Solid Waste Management in Zanzibar

In 2017, Zanzibar municipality was generating approximately 230 tonnes of municipal solid waste (MSW) daily, with only 52% of it being collected and transported to five transfer points. From these points, the waste was then hauled by trucks to an uncontrolled disposal site located 20 kilometers outside the city. The waste collection rate in Stone Town was relatively high, at around 85%, but in other areas, the efficiency dropped to below 40%. At that time, there was no treatment or processing of MSW in Zanzibar, leaving waste management practices inadequate and unsustainable.

To enhance solid waste management practices on the island and implement sustainable local policies, the Zanzibar Environmental Management Authority (ZEMA) signed a Memorandum of Understanding (MoU) with the Centre for Science and Environment (CSE). Under this agreement, a pilot project on decentralized waste management was launched in September 2017 in Shaurimoyo, a low-income area in Zanzibar. The project aimed to improve MSW collection for 200 households, reduce the volume of waste sent to landfills, and adopt a sustainable waste segregation incentive model, promoting more effective and environmentally friendly waste management practices.

The selected households participated in a waste segregation initiative, dividing their waste into three categories: wet, dry, and domestic hazardous waste. The project provided one bin and two plastic bags for this purpose. Members of the Shaurimoyo Waste Management Society (SWMS), an informal community group, played a key role in educating households about the importance and methods of waste segregation. The segregated waste was then collected, with biodegradable materials being composted in three aerobic composting pits. Dry waste was further sorted into categories such as plastic, glass, and paper, stored in bags, and handed over to waste recyclers. Domestic hazardous waste was transported to the landfill by the Municipality. The success of this pilot project led to its replication in other areas, beginning with the Mpendae area in Zanzibar, where wet waste from 150 households was targeted for treatment through composting.



Source: Duston Woodhouse on Unsplash



IMPACTS TO ACHIEVE SDG 11.6.1

- 100% door-to-door collection from 200 households in the pilot area, using one tipper and wheelbarrows.
- MSW segregated on three fractions (85%-90% efficiency).
- 45 – 60 kg of wet waste processed daily in three composting facilities, each with a capacity between 80 – 100 kg..
- Dry waste further segregated and sent for recycling; approximately 120 kg of dry waste collected per month. PETs and glass was sold to recycling facilities for 0.066 USD / kg and 0.088 USD / kg respectively.
- Processed compost was packed and sold for 1000 Tsh (approx. 0.45 USD in 2017) per kilogram.
- For additional revenue, society workers started planting and growing vegetables at the pilot site and selling these to local customers.
- The pilot site, originally an uncontrolled disposal area, was transformed into a processing facility and learning center. This upgraded site now serves as a hub where citizens can learn about the decentralized waste management model and purchase compost, promoting community engagement and sustainable practices.
- The model was replicated in other areas in Zanzibar, with Mpendae area to be the first one after Shaurimoyo.

Workers manually processing compost



Source: Down to Earth

Composting pit



Source: Chandrabhushan

INSTITUTIONAL SUSTAINABILITY

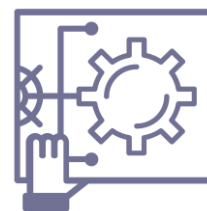
To ensure institutional sustainability, the Zanzibar Environmental Management Authority (ZEMA) has collaborated closely with the Centre for Science and Environment (CSE), the Department of Environment (DoE), and Zanzibar Urban Municipal Council (ZUMC). This partnership aimed to promote decentralized waste management systems by implementing pilot projects and advocating for policy adoption at both national and local levels. As part of this initiative, ZUMC and CSE have not only trained but also employed members of the Shaurimoyo Waste Management Society, integrating local expertise into the waste management framework. This approach strengthened institutional capacity and ensured the long-term viability of decentralized waste management practices in Zanzibar.



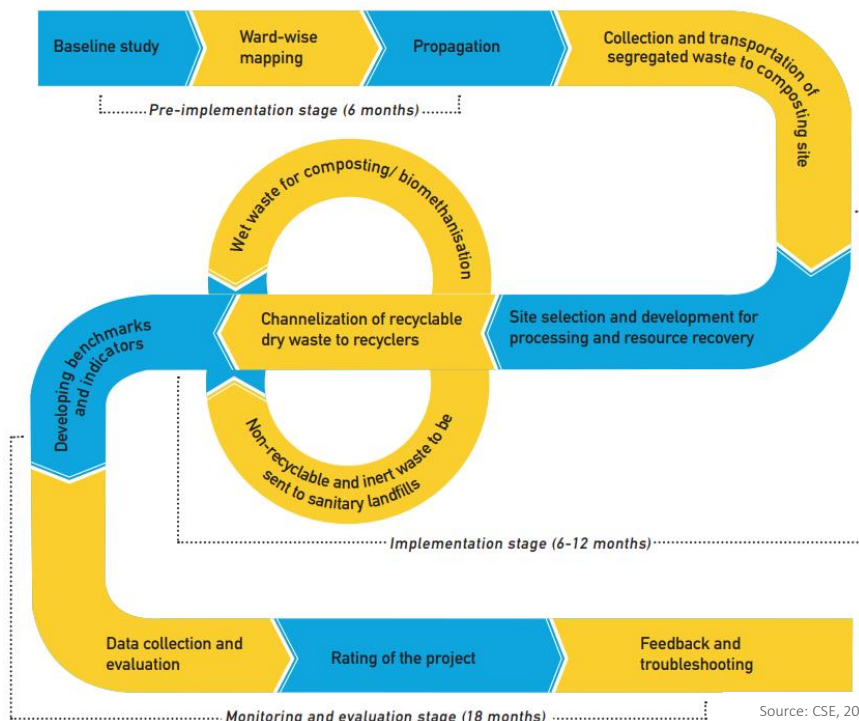
PLANNING & MONITORING

The pilot project was closely monitored over an 18-month period following its implementation. Encouraged by the positive outcomes observed during the initial months, ZUMC expanded the model to the Mpendae area, constructing two composting pits and involving 150 households in the decentralized waste management system. Building on this success, in 2019, ZUMC approved the Urban Municipal Council Solid Waste Management Regulations. These emphasize the responsibility of waste generators to segregate their domestic waste into three streams: compostable, recyclable, and non-recyclable. ZUMC is tasked with ensuring that this segregated waste is properly collected, processed, and disposed of in a manner that maintains segregation. Additionally, ZUMC is responsible for educating households, businesses, and institutions on the importance of reducing, segregating, reusing, and recycling waste. The regulations strictly prohibit the burning or burying of waste, marking a significant step towards sustainable waste management in the region.





APPROPRIATE TECHNOLOGY



Source: Chandrabhushan

Source: CSE, 2017; Chandrabhushan

FINANCIAL SUSTAINABILITY



To encourage household participation in the pilot project, the municipality exempted the 200 pilot households from user fees. The financial sustainability of the pilot project was supported through several revenue-generating activities. The SWMS workers further segregated dry waste, and recyclable materials like PETs and glass were sold to recycling facilities for \$0.066 and \$0.088 per kilogram, respectively. Additionally, processed compost was sold at \$0.45 per kilogram. To boost income, society workers also began cultivating and selling vegetables grown at the pilot site to local customers. These initiatives supported the project's financial viability.

STAKEHOLDER INVOLVEMENT / INCLUSION OF INFORMAL WASTE SECTOR



The pilot project actively involved the Shaurimoyo Waste Management Society, an informal waste management group, with significant support from the Centre for Science and Environment (CSE) and the Zanzibar Urban Municipal Council (ZUMC). Eight members of this informal society were fully employed through the project, creating vital job opportunities. The initiative not only provided employment but also empowered women, who played a central role in conducting information campaigns, raising awareness, and managing the collection and processing of waste. By including the informal waste sector, the project harnessed local expertise and fostered community ownership, enhancing its overall effectiveness and sustainability.



SOURCES

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