

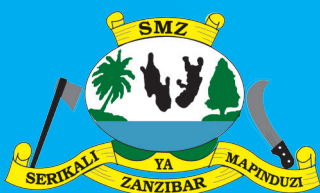


PILOT PROJECT

DECENTRALIZED SOLID WASTE MANAGEMENT

IN ZANZIBAR, TANZANIA

A JOINT INITIATIVE OF CENTRE FOR SCIENCE AND ENVIRONMENT (CSE),
ZANZIBAR ENVIRONMENT MANAGEMENT AUTHORITY (ZEMA)
AND ZANZIBAR URBAN MUNICIPAL COUNCIL (ZUMC)





*Launch of
decentralised
pilot project in
Shaurimoyo*

On 27 January 2017, a Memorandum of Understanding (MoU) was signed between Centre for Science and Environment (CSE) and the Zanzibar Environmental Management Authority (ZEMA) to facilitate better solid waste management practices and policy in the autonomous island of Zanzibar. As part of the MoU, on 6 September 2017, a decentralized pilot project on waste management was launched 3 km from Stonetown, in Shaurimoyo, a low-income area in Zanzibar. Presently, all 626 households are giving segregated waste. By adopting a segregation-incentive model which is frugal and wealth-generating, this initiative is helping transform Zanzibar into a zero-landfill island.

STAKEHOLDERS INVOLVED

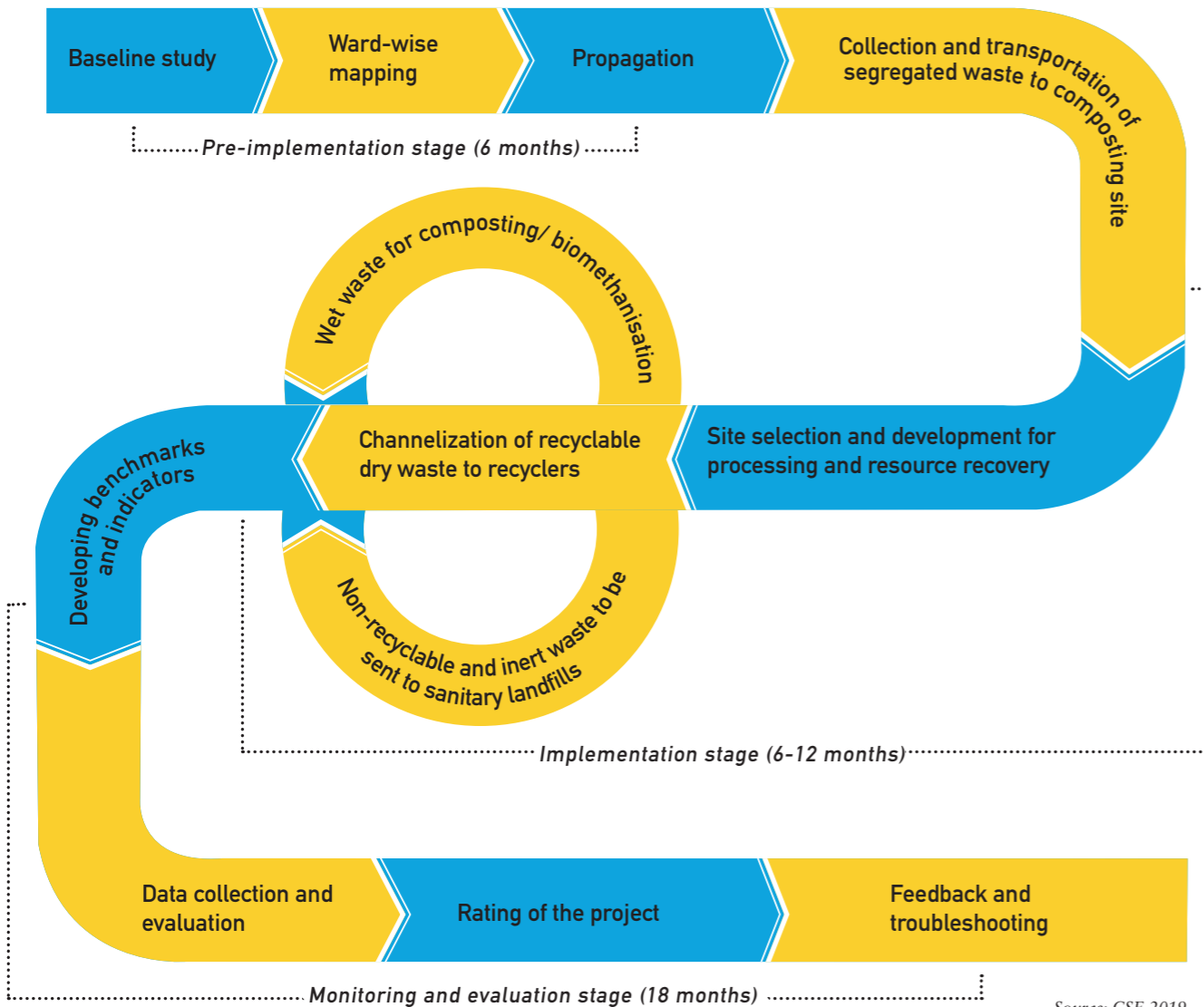
CSE is working together with ZEMA, Department of Environment (DoE) and the Zanzibar Urban Municipal Council (ZUMC) to push for and implement decentralized waste management systems in Zanzibar, ensure the model is replicated in the whole island and municipal bylaws for solid waste management are adopted throughout the island.

Steps for decentralized waste management in Zanzibar

PROCESS

Under the pilot initiative, 626 households in Shaurimoyo were mapped by an informal society, the Shaurimoyo Waste Management Society (SWMS), with the help of CSE and ZUMC. The mapping was done in two phases—the first mapping was done in July 2017 for 200 households, and the second mapping was done in August 2018 for the remaining 426 households.

The flowchart shows the detailed methodology that has been adopted for the pilot in Shaurimoyo.



Source: CSE, 2019

AWARENESS AND PROPAGATION FOR WASTE SEGREGATION

Under the pilot initiative, 16 SWMS workers chosen by ZUMC are responsible for door-to-door propagation to educate residents on segregation into wet, dry and domestic hazardous waste, and to collect the segregated waste. ZUMC pays a monthly salary of 80,000 Tanzanian Shilling (Tsh) (about US \$35) to each worker.



Mapping of households in Shaurimoyo, Zanzibar

PHASE 1, SEPTEMBER 2017

With an initial infrastructural support from CSE, three aerobic composting pits were constructed on September 2017 in Santana playground (earlier a dumpsite), Shaurimoyo, each with a capacity of 80–100 kg. Also, one bin (for wet waste) and two bags (for dry and domestic hazardous waste) were distributed to 200 households during the launch of the pilot. The details of the households that received the bins were noted and marked with stickers to keep a track of the progress of segregation. The households also received pamphlets explaining the process of segregation.

PHASE 2, AUGUST 2018

In May 2018, with an initial support from CSE, a shredding machine for compost was fabricated locally. In August 2018, ZEMA further set up three more aerobic composting pits in Santana playground to treat the wet waste from the remaining 426 households. Similarly, bins and bags were also distributed to the households to keep segregated waste. In addition, a storage centre and washroom facility (toilet with septic tank and soakpit) has also been set up with the support of CSE.



Distribution of bins and bags for segregation in Shaurimoyo



Compost shredding machine



Storage area

Model waste processing site at Shaurimoyo



Composting pits



Washroom facility for workers



Collection of segregated waste by Shaurimoyo waste society workers

WASTE COLLECTION, TRANSPORTATION AND PROCESSING

ZUMC has provided one tipper and three wheel barrows to support collection and transportation of segregated waste to the processing site. The collection happens daily between 8-12 PM. The workers transfer the waste to the tipper which has two drums placed on it for taking the wet and dry waste. The tipper takes the segregated waste to the model processing site situated around 2 km away. Currently, all households at Shaurimoyo are segregating waste at source and segregation percentage is over 85–90 per cent.

About 150–200 kg of wet waste is collected daily and sent to the model processing facility. Dry waste is further segregated into PET, glass and paper, and is stored in bags and given to a waste dealer. About 120 kg of dry waste is collected per month. The domestic hazardous waste is handed over to the municipality and goes to the Kibele landfill. To incentivize source segregation, initially 200 households were exempted from paying the user fees. However, with the new municipal solid waste management bylaws, the municipal council shall collect user fees from every household and commercial entity, whenever notified.



Transportation and treatment of segregated waste



MAJOR OUTCOMES

1

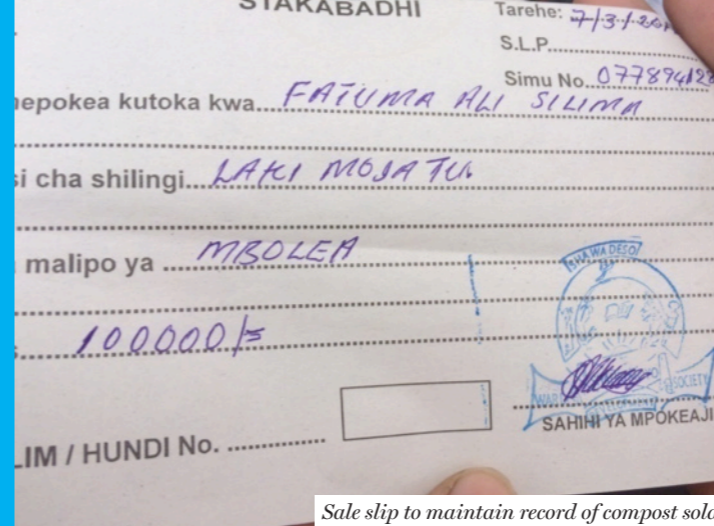
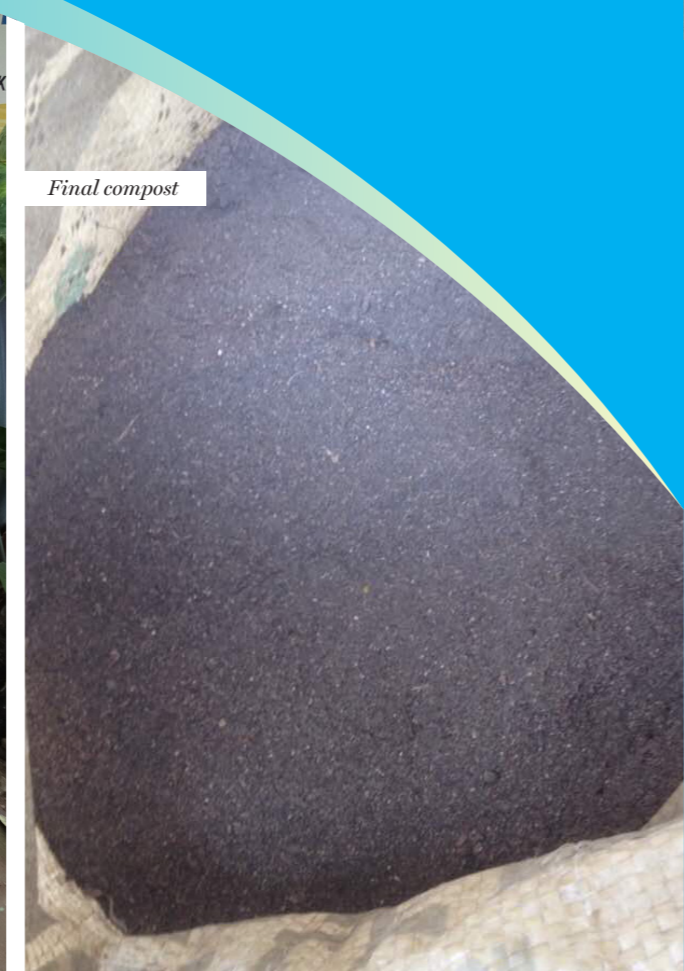
LIVELIHOOD AND EMPOWERMENT TO LOCAL COMMUNITY (ESPECIALLY WOMEN):

The pilot project has not only brought employment opportunity to the informal society but has also empowered the women workers who are mainly involved in propagation, collection and processing. The informal society is incentivized for their work by the sale of compost and dry recyclable waste.

Worker using shredding machine



Final compost



Sale slip to maintain record of compost sold



Packaged compost for sale



2

INCENTIVES: The first batch of compost was produced in December 2017 and so far about 3000 kg of compost has been sold @1000 Tsh/kg. To earn additional revenue, the society workers with the help of ZUMC have also started growing vegetables at the pilot site and earn approximately 200,000 Tsh (US \$ 88) from sale of vegetables quarterly. Also, PET bottles and glass are sold to waste dealers @ 150 Tsh /kg (US \$ 0.066) and 200 Tsh /kg (US \$0.088) per month respectively. Overall, about 600 kg of waste is being diverted from landfill daily via this pilot project.



Vegetable
plantation
at site



3

REJUVENATION OF DUMPSITE: The pilot site was earlier a dumpsite and residents often complained of stench and littering. The pilot project has converted the dumpsite into a processing facility and a learning centre where stakeholders and residents come and learn about the model and also buy compost. So far, visits have been made by BRAC Tanzania, Bonn University-Germany, the State University of Zanzibar and stakeholders from all municipal councils of Zanzibar.

4

MUNICIPAL BYLAWS FOR SWM: CSE has been working with ZUMC and ZEMA for the past one year on the preparation of municipal bylaws to ensure segregation, recycle and reuse is adopted across the autonomous island. The draft bylaws were approved during the Full Council Meeting at ZUMC on February 2019 and was further approved by the Regional Commissioner's office and the Ministry of the Local Administration, Zanzibar. Currently, the draft municipal bylaws for SWM have been submitted to the Attorney General's office for gazette notification.

*Bylaws meeting held
with all municipal
councils of Zanzibar
on 24th August 2018*



5

REPLICATION OF PILOT IN DIFFERENT AREAS OF ZANZIBAR: In April 2018, construction of composting pits was done in the Mpendae area in Zanzibar. The two pits constructed by ZUMC cater to 150 households. ZEMA also plans to replicate the same decentralized segregation model across Unguja and Pemba Island.

Councilor of Shaurimoyo addressing the media





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