



DECENTRALIZED WASTEWATER TREATMENT SOLUTION FOR DAR ES SALAAM - DEWATS FOR DAR

Grantee
**BREMEN OVERSEAS
RESEARCH AND
DEVELOPMENT
ASSOCIATION (BORDA)**

Grant amount
GBP 543,285

Project duration
June 2016–May 2020

Implementing partner
Ifakara Health Institute

Beneficiaries
Youth groups, households,
women and girls

Location
Dar es Salaam



Local construction workers build a Decentralised Waste Treatment System in Ubungu, Dar es Salaam.

PROJECT BACKGROUND

In Dar es Salaam, Tanzania – one of the fastest growing cities in Africa – more than 90 per cent of the capital's population use on-site sanitation facilities such as septic tanks and pit-latrines as conventional sewerage networks coverage cannot keep up with the rapid urban sprawl.

In unplanned areas, road infrastructure is often inadequate and streets are too narrow for conventional wastewater-collection trucks to access the pits and dredge them using a vacuum pump. Instead, residents often opt for illegal, expensive and unhygienic methods such as cracking a hole in the side of the pit during heavy rain to allow rainwater to 'flush' out the contents; or engaging an informal pit-emptier, or 'frogman', to jump into the latrine and manually empty the pit with a bucket. It is therefore no surprise that cholera is still a threatening epidemic in Tanzania.

In response to the high demand for alternative and affordable faecal sludge solutions, business models surrounding faecal sludge management (FSM) are currently being developed and tested in Dar es Salaam, as part of a project implemented by BORDA Tanzania and IHI and supported by HDIF.

PROJECT DESCRIPTION

This initiative considers the market value of each product and service along the FSM service chain (from the point of waste generation/collection, through the stages of transport, treatment, and safe discharge/disposal/reuse) and seeks to empower local entrepreneurs to solve community sanitation challenges in a professional and financially sustainable way.

The business models use locally manufactured latrine-emptying tools, simple transportation technologies, and decentralised faecal sludge treatment plants (FSTPs) to provide low-cost latrine emptying services. Additionally, research is being undertaken by IHI to assess the marketability of output products (e.g. biogas, biosolids and nutrient-rich water for irrigation) to offset maintenance and operation costs. As private service providers can generate profits, competition will evolve and result in lower emptying costs for the urban poor.

This is the first public–private partnership model for sanitation service provision in Tanzania, and is likely to be a breakthrough for the local sanitation sector, as well as providing an example for neighbouring countries with similar urban sanitation challenges.



PROJECT RESULTS

To date, one FSTP has been constructed in Mburahati sub-ward, in Ubungo Municipality, and a second FSTP is almost completed in Wailes sub-ward, Temeke Municipality. Both treatment plants have a daily receiving capacity of 10 cubic metres, and will be operated by a local entrepreneur who will provide pit-emptying services for the local communities.

During construction of both treatment plants, baseline studies were undertaken in each location to collect data from households regarding the existing health status, existing service options available, and willingness/ability to pay for improved services. Final community surveys will be conducted after the plant is operational and pit-emptying services are established within each community, in order to measure the health and environmental impacts of the intervention.

GENDER EQUITY AND SOCIAL INCLUSION

During construction of the FSTP in Mburahati, female community members were involved as casual labourers to help increase 'ownership' of the project, as well as providing employment opportunities. The project has also received interest from a local female-managed company, which will apply for becoming the FSM service provider and operator for the FSTP.

PRINCIPLES FOR DIGITAL DEVELOPMENT

Design for scale: BORDA and IHI consider designing for scale as a high priority. Participants from the Dar es Salaam Water and Sewerage Corporation (DAWASCO), Dar es Salaam Water and Sanitation Authority (DAWASA), Dar es Salaam Regional Commissioner's Office (RCO) and private-sector construction companies have all been invited regularly to observe important steps during construction of the two FSTPs. The project has also conducted workshops to raise sector awareness on the challenges experienced within this project, in order to streamline future citywide scaling-up initiatives.

Build for sustainability: To ensure the sustainability of the project, recommendations have also been developed for the associated enabling environment – notably the institutional framework – to guide the relevant stakeholders through their various roles and responsibilities, such as regulation/monitoring, service provision, flow of funds, licensing, operation and maintenance.

Reuse and improve: The project intends to bridge the gap between existing pilot projects and future citywide scaling-up of faecal sludge and decentralised wastewater management solutions in urban Tanzania. It is likely to be a breakthrough for the local sanitation sector, as well as providing an example for neighbouring countries with similar urban sanitation challenges.

NEXT STEPS

This project intends to provide the necessary lessons and recommendations to bridge this gap between pilots and future citywide scaling-up initiatives currently under discussion in Tanzania and neighbouring countries. The World Bank and DAWASA were closely involved throughout the implementation of the project, and are now planning to implement a further 50 FSTPs. Elsewhere in East Africa, German International Cooperation (GIZ) is supporting the scaling-up of FSM through inter-city knowledge exchanges in cities such as Lusaka (Zambia) and Kampala (Uganda). The future vision is that in the long term, the public utilities will become the asset owners and replicate the model for decentralised faecal sludge service provision and wastewater treatment, but with centralised management.



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