



ENVIRONMENTAL CLEANLINESS IN MOSHI, TANZANIA

LESSONS FOR WASTE COLLECTION, SERVICE DELIVERY AND REVENUE GENERATION

Many municipal councils face growing demands for services amid shrinking revenue streams. They are also pressured to keep up with internal drivers of consumption and external factors such as resource scarcity and climate crisis, which present threats to urban residents and the infrastructure systems they depend on. One of the most visible manifestations of urban growth and infrastructure backlog is the presence of waste in cities; it is a central challenge voiced by local governments around the continent and is implicated in environmental pollution,

disease, infrastructure damage, flooding, and for undermining the beauty of urban public space.

In response to some of these uncertainties, and particularly the waste challenge, the Moshi Municipal Council (Moshi) in Tanzania states a value proposition which places service delivery over revenue collection and makes use of the country's clear administrative demarcations to empower lower levels of government to undertake service delivery. It does so by providing an enabling policy environment,

which is vertically embedded from central government through local government and ward-levels to *mtaa*- (sub-ward) level, by involving community and private entities, by using award incentives and punitive fines. The success of this system has resulted in Moshi being named *Tanzania's cleanest city* for several years. This case study explores the value statement and approach to service delivery and revenue generation in Moshi; it draws out context-based insights on how this Municipality has been able to shape a more sustainable waste system and make use of grassroots level structures to deliver a service, generate revenue, and create shared values among its citizens.

"Solid waste management is not considered as a revenue stream but rather a service. – The reason Moshi is so clean is because it is the people's culture, the cooperation they offer to the municipality and the fact that they are educated contributes to their behaviour. The modalities we use to run the whole process are taken very seriously by the whole municipality...we have been number one for many years so we are obliged to keep that number one place."

-- Mr Mwandezi, Moshi City Director



Setting the scene

Moshi is situated in north-eastern Tanzania -close to the Kenyan border-- on the lower slopes of Mount Kilimanjaro, a dormant volcano which is also the highest mountain in Africa. Moshi Municipal Council falls within one of six municipal districts in the Kilimanjaro Region. The municipal area covers 59 km², with a population of 202,379 residents, although this increases by 28 percent to 282,379 during the day due to an influx of workers. The annual population growth rate is 2.9 percent, attributed mainly to rural-urban migration and migrant labourers. According to the 2002 population and housing census 52.6 percent of people in Moshi were unemployed.

Moshi is also one of Tanzania's major coffee producing hubs. Agriculture is practiced within the municipal bounds, mostly by residents in sparsely populated areas as an alternative source of income. The residents are engaged in horticulture and grazing of cattle, goats, pigs and poultry. The area of land used for urban agriculture is 120 hectares (Moshi Environmental Profile, 2008). Crops are prone to floods during periods of heavy rainfall and drought.

Moshi is rich in natural assets, including the Rau River and Rau Forest, Njoro Forest, Kinukamori and Marangu waterfalls, Uhuru Park Garden, Njoro Spring, Karanga River and Nshiri Spring. Despite deforestation on the slopes of Kilimanjaro and other environmental challenges, Moshi boasts a general culture of caring for the environment and respect for the mountains, rivers and forests.

Facts and figures: Moshi

Local government name

Moshi Municipality

Country and province

Tanzania, Kilimanjaro Region

Population (2016)

200 000; 2.9% annual growth rate

Total area

59 km²



Map of Moshi Municipality



A large blue billboard is the background for the title. It features the Swahili phrase 'Peleka taka kwenye Guba' (Put trash in the bin) at the top. Below the text, there are two illustrations: a woman in a blue dress carrying a yellow bucket, and a man in a yellow shirt pouring waste into a green bin. The bin has the words 'WEKA TAKA HAPA' (Put trash here) on it. At the bottom right of the billboard, there is a small circular logo with the text 'Usafiri taka chini' (Travel with trash inside).

DEVELOPING AN APPROPRIATE ENVIRONMENTAL AND CLEANLINESS BY-LAW

Moshi Municipal Council declares its vision as “Halmashauri inayotoa huduma bora kwa kushirikisha na kuwajibika kwa wananchi wake na kutegemea zaidi raslimali zilizopo kwa kufuata sharia na misingi ya demokrasia” or “To be a Council that delivers better services by engaging its people and encouraging accountability of its stakeholders, depending on available resources, adhering to existing laws, and abiding by the principles of democracy.” This mission shows the Council’s commitment to people-centred service delivery and innovation within clear and strong legal frameworks.

Environmental protection and management is one of Moshi’s major priorities; as a result, a great deal of effort and resources are directed to it. Before 2006 the Council was the provider of waste services, with residents not seeing waste or environment as their responsibility in any way. As a way of prioritizing environmental protection, Moshi Municipal Council ran consultations with their citizens to ascertain how individuals could contribute to a vision of environmental cleanliness. At the policy level, in 2000, the Council committed to a process to clean

the city, promulgating an environment and cleanliness by-law: *Sheira Ndogo (Usafi Wa Mazingira), Za Halmashauri Ya Manispaa Ya Moshi*, 2006. The by-law was legally vetted by council committees, the full council, the regional secretariat and the President’s Office on Regional Administration and Local Government (PO: RALG), before being approved and sent back to the community.

The Council consistently educates the community to comply with the by-law and therefore to keep the environment clean. Environmental awareness campaigns and clean-up or *sanitation* day events encourage residents. Abundant signs and public announcements alert residents and visitors to keep the city clean.

To support enforcement of the by-law, the Council has provided numerous litter bins, and larger waste drop-off facilities at markets and bus terminals. The clear access to facilities and presence of environmental messaging helps to build the community’s habit of keeping the environment clean.

What is unique about the by-law is that it can be enforced by any person. For example, if someone is caught littering, another individual can report them, and penalize them with a TZ shilling 50,000



The Mawenzi ward council for waste

(about 21 US\$) fine. The person who administers the fine then submits it to the local ward council, and may keep half the fine. The person who received the fine may also appeal the case with that ward council. Additionally, there are auxiliary policies that assist with enforcement of the by-law.

The main impact of the by-law is that it has contributed, not only to reduced litter, but also to efficient waste collection. Moshi's by-law enables private companies and Community Based Organization (CBOs) to participate in service provision and they are contracted to both to enforce the by-law, and facilitate waste collection.

The provision of waste management services is decentralized to ward level, whereby wards are able to collect revenue, via a service collection fee, and spend it on service provision, such as payment for labour, administration, equipment and truck fuel. This community based provision of the waste management service has built a sense of ownership at the grassroots level. The development of the by-law contributed significantly to the rapid change of Moshi's image, with the municipality now widely praised for being the cleanest in Tanzania.

Moshi's success has been made possible by a number of enabling factors described below.

1. Improved infrastructure and facilities

The Moshi Council is improving waste management infrastructure through the provision of skip buckets for solid waste collection and storage in strategic areas throughout town such as markets and bus terminals.

2. A focus on health and environmental education

The Moshi Council prioritizes public education on health and with the aim of building a culture that values a clean environment. Some initiatives on community activation and environmental education include a monthly clean-up campaign, which is reportedly well attended, with the community participating by cleaning their surrounds and voluntarily paying a solid waste collection fee.

3. Empowered community-led environmental management

To embed a sense of responsibility for waste management throughout the city, the Council decided to enable Ward Councils to provide solid waste management services. Ward Council structure includes community leaders and a Councillor, a Health and Environment Committee and a Ward Development Committee, which is responsible for Ward planning and activities.

In terms of roles and responsibilities, Moshi Municipal Council is responsible for planning, supervision, coordination and monitoring of performance across the city, provision of solid waste collection trucks and other equipment, and management of the disposal site. The Ward Council Development committee facilitates the collection of solid waste by community or private entities, using the trucks provided by Municipal Council. The Ward Council collects the waste service fee from business and residents and uses the funds to pay the collectors, fuel the Municipal trucks and cover its administrative costs. None of this revenue for waste collection arrives at Moshi Municipal Council, demonstrating a clear priority of devolved service delivery, and investment in the effective functioning of Ward Councils.

Moshi has 21 wards it is at this level that planning takes place and people are incentivized to keep their areas clean. There are variations in ward performance in terms of frequency and volume of waste collection and revenue collection. Many wards take the ethos of this decentralization approach further, and encourage mtaa-level involvement. ('mtaa' refers to a cluster of streets, which forms a smaller or sub-section of a ward.) This is seen clearly in the layering of Ward-level competitions and sub-ward or mtaa-level competitions for best performance, as described below.

The tariffs for waste collection are regulated by the by-law and is customised for different categories of users, including residents, hotels, and commercial entities. The payment/revenue collection system is linked to the council's records, therefore when a resident or business makes a payment it is reflected.

4. The award for health and environmental sanitation

A new programme at National level added further motivation for Municipal Councils to invest in effective waste systems. Identifying the relationship between poor environment and disease, the Ministry of Health and



PO:RALG established a competition between Municipal Councils to encourage Municipalities and Districts to invest in environmental cleanliness. The National Health and Environmental Sanitation competition started in 2008, and assesses Municipal Councils against a checklist of environmental, infrastructural and process indicators, ranking Councils by best performance. Such criteria also assess the Council's ability to provide quality services including water, sanitation, public space and bus terminals.

Moshi has been Tanzania's leading Council in the Health and Environmental Sanitation for the past four years. The award has been a big incentive for Moshi to retain its title as the cleanest city in Tanzania. As such, the Council has concentrated on the provision of more solid waste collection trucks and constructed a sanitary landfill to increase access to solid waste collection services and safe-guard the environment and public health in general.

Although Moshi did not win the 2018-2019 competition, the City Director, Mr Mwandezi, reflected that "it is important that other cities get showcased so that they can be encouraged - and this is an opportunity for Moshi to learn how to improve its systems even more."

Moshi Municipal Council introduced a similar competition at the ward-level to promote good performance in waste collection and cleanliness, offering a money prize to the winner. Some wards also run the competition at the sub-ward (*mtaa*) level, where the winner receives TZ shillings 500 000 (approximately 217 US\$). The size of these prizes differs annually and at times there are different types of prizes. For example, one year, an *mtaa* won a motorbike in addition to the cash prize.

How waste management works in Moshi

- Residents are encouraged through public education to keep the environment clean by collecting waste properly.
- Sub-ward (or 'mtaa') units collect the waste with designated trucks. Residents and businesses pay for the service and an invoice is issued.
- The money collected pays environmental officers/casual workers, who are on 3 month-contracts. On average (depending on the size of a ward), there are 20 people working on the waste collection; the initiative thus contributes to revolving job creation.
- The money collected is also spent on the fuel and maintenance of trucks and other office running costs such as stationery. The target is 45 000 million Tanzanian shillings per year (about 19.5 million US\$); but this is more because of the expansion of businesses and households. A monthly allowance is paid to the sub-ward (*mtaa*) chairpersons, the collectors (estimated at 10 per ward) and environmental officers, who are paid 20 percent of the money collected.
- There are 8 people that are the enforcers of the by-law, they issue fines and do inspections. 50 percent of the fine goes to the collectors & the other to the office; there is a book that keeps a record of the offenders.
- The focus is not only on enforcement and regulation but on education and behaviour change as there are constant reminders for people not to litter and in the event that they do and are issued a fine, they have an opportunity to appeal.



LESSONS LEARNED

Good waste management strategies can be spread through city networks.

In addition to winning awards for its cleanliness, Moshi has gained a good reputation for its waste collection and environmental cleanliness approach. As a result, it has attracted visitors from other councils in Tanzania and in neighbouring Kenya who have visited to learn how the municipality manages to keep the city clean. This learning has also attracted interest of larger cities, such as Dar es Salaam. The result of this visit was that the Dar es Salaam Regional Commissioner at the time, Hon. Paul Makonda, introduced the same initiative in the City with the slogan *"Dar es Salaam bila uchafu inawezekana"* which translates to 'Dar es Salaam without pollution, is possible', through which a number of youth workers have been employed as enforcers of the environmental law.

Plastic recycling remains a challenge.

Plastic materials are a challenge as there is no recycling plant. However, it was reported that at present recycling is limited to paper, scrap metal, plastic and organic waste which is used as animal feed. Waste separation happens at collection point with the plastic and paper being processed by a factory that manufactures pipes and toilet paper. The disposal site is reportedly almost full and

the future plan is to have a new disposal site and waste separation at source and there are a few people that will have permits for solid waste.

- Implementation of the by-law requires ongoing attention. Once the by-law was put in place, circumstances continue to evolve and ongoing attention is needed to keep the waste management systems functioning smoothly. For instance, increasing levels of waste present a challenge because there are not enough trucks to manage the increase. Therefore, a budget request to buy another truck had to be made.

Additionally, the Council provides a limited budget due to fiscal allocation arrangements at the local and central government levels. For example, Moshi used to get 700 million TZ shillings (approximately 300 000 US\$) from property tax and 400 million TZ shillings (approximately 174 000 UD\$) per annum from advertising (sign posts). Since the appointment of a new agency, which deals with infrastructure, income from sign posts has declined.

- New systems must accommodate all in the community. Moshi Municipal Council, like many other urban authorities in Tanzania, is facing an abundance of street traders

commonly known as *Machinga* who use the slogan *mfuata mteja* which means 'follow the buyer'. According to the city council, it is a result of this slogan that many of them display their commodities on the walk ways, open spaces in front of shops and anywhere they feel they can get customers. It is also reported that the *Machinga* business has a negative impact on the environment due to the solid waste packaging materials they produce and leave behind at their trading places. To address the challenge of street trading, the municipal council developed a trading space called *Manyema* to accommodate *Machinga*. However, not satisfied with this area, many of the traders went back to trading on the street.

Other efforts to engage with *Machinga* include Council attempts at registering all *Machingas* — name, photo, trading space and

the type of commodity they sell. The aim of this approach was to identify them and their commodities so that they can be grouped according to what they sell. Following this, they were accommodated in several markets namely; Kiusa, Majengo, Pasua, Bomambuzi and Manyema across the city and they were also permitted to make use of two lanes in the Central Business District on a daily basis and two roads were closed on the weekends to allow them to trade. Even with these initiatives to manage *Machingas*, there are still many trading illegally in undesignated spaces and contributing to environmental pollution.

This is a challenge across many African cities, and warrants novel approaches to support traders to contribute to local economies and derive livelihoods, while reducing negative impacts of congestion, litter and conflict.

Looking forward

The Moshi Municipal Council is still invested in continuing to improve their waste management and environmental protection efforts. The Council would like to invest further in service provision and procure more equipment and solid waste trucks, as well as establish a composting plant and a sanitary land filling collaboration and with support from the City of Tübingen, Germany.

Additionally, some wards are saving funds to buy their own truck for the ward boundary as the current one is shared by all the wards. One truck is estimated to cost about 200 million TZ shillings (approximately 87 000 US\$). The Council also wishes to intensify the promotion of recycling and continue with a greening campaign which would consist of tree planting and the beautification of the municipality.



Acknowledgements

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This case study is based on a presentation made by Moshi during October of 2018, at the Urban Nature dialogue that was held in Dodoma, Tanzania's capital City, as part of the INTERACT-Bio dialogue series. The aim of the dialogue was to bring together governments and other actors at all levels – local, subnational and national, to discuss the importance of biodiversity benefits and how to integrate their efforts for mainstreaming biodiversity and ecosystem services into core subnational government functions such as spatial planning, land-use management, local economic development and infrastructure design.

The dialogue was opened by the President's Office: Regional Administration and Local Government's Director for Sector Coordination. Three of the INTERACT-Bio project cities: Dar es Salaam, Moshi and Arusha each made a presentation on the status quo & current initiatives related to urban nature with a focus on the following guiding questions: What are the current initiatives? What worked and what did not work? Why are some successful and others not? One of the outstanding successes featured was Moshi Municipality's innovative approach to waste management. Waste is a huge challenge to environmental sustainability and protecting nature's services in Tanzanian cities.

The purpose of the Moshi Municipal case study is to showcase the system which underlies the extraordinary success this Municipality has had with waste management. The intention is to document this learning so that it can be shared as an example of 'good practice' with other cities and municipalities for their consideration and to apply elements that are relevant in their own contexts.

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