Solid waste management lessons Kenya can learn from Arusha

BY LEOPOLD OBI

In Arusha, Tanzania

The Muriet Sanitary Landfill, Arusha City's only garbage disposal site, was once a large open smudge for all sorts of garbage. Dozens of dump trucks frequently shuttled to the dumping site ferrying the city's unsightly trash.

As time passed by, the filth and the putrid smell of the decaying waste became an unbearable eyesore, besieging the city's glorious green image, and its residents' health and pride. Then, in 2014, the Tanzanian government embarked on yet a delicate but transformative mission to fix Arusha's solid waste management mess that restored the city's glory as the veritable Geneva of Africa.

"It is actually hard to imagine that we are now walking over garbage. You cannot even get the smell of garbage," remarked Marco Chaha, Muriet Landfill manager, as he took us around the landfill located on the outskirts of Arusha Town.

At the landfill that stretches over 29 acres, tonnes of compacted garbage materials are covered with layers of black cotton soil making the site look like some random agricultural farm land.

"Here we only accept general waste, other hazardous waste and medical waste are handled elsewhere or

incinerated. Garbage is trucked into the site during the day and piled up in one corner where waste pickers sort out the waste for recyclables such as plastic materials for sale and at night our tractors compact and bury what is left,”Chacha pointed out.

Established in 2003 as an open dumpsite, just like the Kenya’s infamous Dandora dumpsite, Muriet landfill once posed a big waste disposal headache to its city authorities. Back then, people disposed their trash anyhow as the city chocked under its own trash and flies ran riot as leachate –water from decaying waste – seeped into the underground to contaminate nearby rivers and boreholes.

Diseases and pollution became rampant.

But in a stitch in time, the Tanzanian government pulled a modern waste management technology that was less popular in the continent then, to mitigate the soaring solid waste disaster in Arusha. It further replicated the project in other Tanzanian mainland cities and towns including Dodoma, Kigoma, Mbea and Mwatwa which also had similar problems.

The new waste disposal technology lessons from Tanzania come handy for Kenya where the government is planning to put up a sanitary landfill in Mitubiri, Muran’ga County at an estimated cost of Sh1.2 billion to address the surging solid waste management problem in the county. The Nairobi Services Improvement Project (NaMSIP) which is in charge of the proposed Mitubiri landfill project have also identified two other Nairobi metropolitan counties namely Machakos and Kajiado for similar projects.

World over, climate change and population explosion across cities is exerting immense pressure on social infrastructure such as housing and transport facilities forcing city authorities to scout for smart, efficient and sustainable alternatives. And use of sanitary landfills in solid waste management has successfully been used across many countries over the years to address waste management conundrums. The proposed sanitary landfill project in Muranga county is set to model how Kenya can improve on its management of solid waste.

As opposed to open dumping like in Dandora where heaps of garbage litters are left to decompose in the open, in landfills,waste material is compacted then buried, eliminating the putrid smell and eyesore of trash.

Muriet landfill which is located about eight kilometers to the south of Arusha City, has an estimated lifespan of 10 years and receives at least 271 tons of solid wastes every day from within the city and other surrounding towns.

James Lobikoki, the Arusha City sanitation and environment director, says that in the city which has an estimated population of 700,000 people, less than a kilo of waste is generated daily by every individual.

To streamline garbage collection and disposal process, Arusha city council not only constructed a landfill but also enacted a host of bylaws which roped in local residents and the private sector into daily garbage collection and disposal, Mr Lobikoki explained.

“We have contracted private companies and CBOs to be in charge of cleanliness, collection and disposal of wastein every ward,” pointed out Mr. Lobikoki adding the city has 25 wards.

The bylaws also provide guiding tariffs for waste collection charges, for instance households pay between Tsh1,000 (Ksh50) and Tsh2,000(Ksh100) while small businesses pay Tsh5,000 (Sh250) per month for the waste they generate.

Because the CBO’s originate from within the localities, they wouldn’t want to their areas to look filthy so they work hard to ensure the cleanliness of their neirghhoods. Members of the contracted CBOs and private companies sweep, collect and transport the streams of garbage to the landfill.

“They also collect revenue for garbage collection and remit 15 per cent of the amount to the local authority. They city council provide receipts which once used are returned to the city council at the end of every month for auditing,” Mr Lobikoki added.

Trucks loaded with solid waste are weighed at the weigh bridge on the entrance of the landfill andagain after dumping the waste to find the net weight of the load they transported.

At the site waste is compacted to minimize space, and to prevent multiplication of flies. What is compacted hereafter covered daily with soil to eliminate foul stench or fire outbreaks due to explosion of methane gas.

“The biggest challenge we are now facing particularly during this prolonged rainy season is that our bulldozers get stuck in the mud and heaps of waste. We use black cotton soil to cover the compacted waste which has resulted to this muddy condition,” said Mr Lobikoki.

Generally, the construction of landfills is quite a sensitive endeavor that calls for caution and expertise to execute.

When constructing a landfill, the mass of soil which is excavated from the site is kept aside to be used in covering the compressed garbage. Trees are also planted around the site to act as buffer zones and purify the air.

Because the project involves burying of waste, a layer of clay soil is compacted at the bottom due to its impermeable nature. A synthetic liner is then placed on the floor on top of the compacted clay layer. The leachate is collected through pipes laid on the ground and discharged into a constructed wetland. The liquid evaporates and what remains is taken back into the cells to aid in decomposition.

There are many risks and health concerns that come with such a project such as underground water pollution. But while the Tanzanian authorities said they are yet to encounter any disasters they have put up a list of mechanisms to check against any mashups.

“We have sunk 2 deep boreholes ,inside and outside the site for monitoring water quality which is done weekly, monthly and quarterly, “said Tenga E.M.J, an

environmental health officer in charge of Muriet landfill laboratory

“This helps us in monitoring for pollution incidents on the ground water or penetration of liquid wastes into the underground,” he added.

Locals living around Muriet landfill told Nation that the project has open up the remote Muriet area for development and has also created jobs for young people.

Shija Saidi who trades in discarded plastic bottles said the landfill environment is better to work in compared to open dumpsite which is filthy and has a foul smell.

“So far we haven’t seen any health challenges from the landfill, however, a sanitary landfill requires a good operations plan.