



RESEARCH BRIEF, JULY 2019

# SANITATION POLICIES, PRACTICES AND PREFERENCES IN MALINDI, KENYA

## SUMMARY

- Malindi does not have a sewerage network: therefore, all residents rely on onsite sanitation.
- The majority of low-income residents use and prefer water-based sanitation options, such as pour- or cistern-flush toilets.
- Most low-income areas have sandy soil, so pits are prone to collapsing.
- When pits are full, residents commonly rely on informal manual emptiers.
- There is no treatment of wastewater or fecal sludge in Malindi: fecal waste is deposited at a waste site managed by the local water utility, or directly into the environment.

## BACKGROUND

Limited access to safely managed sanitation infrastructure and services compromises public health and economic growth in the developing world. Low-income households are the most affected: they often cannot afford to construct and manage on-site sanitation facilities or connect to sewerage networks (Daudey, 2017). Understanding the economics of sanitation service improvements, including both life-cycle costs and affordability, is essential for expanding safe sanitation in low-income settings.

The Aquaya Institute is conducting this research on urban sanitation economics under the Urban Sanitation Research Initiative, a program managed by Water and Sanitation for the Urban Poor (WSUP). The research goal is to assess the extent to which low-income households can bear the financial costs of safely managed sanitation in five cities across Kenya (Nakuru, Malindi, and Kisumu), Bangladesh (Rangpur), and Ghana (Kumasi). This brief is on sanitation policies, practices, and preferences in the city of Malindi, Kenya.

## MALINDI, KENYA

Malindi, in Kilifi County, is Kenya's 10th largest urban area with a population of approximately 113,641 and population growth of about 3.4% per annum. Malindi town has 44 low-income areas, comprising approximately 27% of the population. Only 38% of low-income households have access to water sources on plot (MajiData, 2011).

Kilifi County does not have a comprehensive legal sanitation framework: there is currently only one sanitation bill (not yet enacted) to guide the provision of sanitation facilities and services, in addition to the national policies. However, a sanitation strategy for Malindi town is under development. The legal responsibilities for sanitation service provision and fecal sludge management are outlined in Table 1.

**TABLE 1:  
SANITATION LEGAL FRAMEWORK**

National policies
<ul style="list-style-type: none"> <li>• <b>Environmental Sanitation and Hygiene Policy</b> (KESHP) (2016-2030): provides broad guidelines to both state and non-state actors to work towards universal access to improved sanitation and a clean and healthy environment for all by 2030. The Policy promotes the adoption of low-cost technologies in peri-urban and slum areas.</li> <li>• <b>Environmental Sanitation and Hygiene Strategic Framework</b> (KESF) (2016-2030): medium-term implementation strategy for the KESHP that focuses on declaring Kenya open defecation free by 2030.</li> <li>• <b>County Environmental Health and Sanitation Bill</b> (2016): guides County Governments on how to develop county level legislation that ensures the effective delivery and regulation of sanitation services and environmental health standards across all counties.</li> <li>• <b>Urban Sanitation Guidelines</b> (2019) (draft): provide recommendations for the provision of sanitation technologies and services implemented in urban areas. County governments should facilitate the selection of appropriate technologies and regulate pit emptying services.</li> </ul>
County policies
<ul style="list-style-type: none"> <li>• <b>Kilifi County Water and Sanitation Services Bill</b> (2015): guides the County Assembly of Kilifi to provide for water and sanitation services to rural and urban areas.</li> </ul>

## METHODS

We conducted reviews of 20 national and county-level documents describing sanitation policies and programs. In the town of Malindi, we conducted 20 transect walks, 15 key informant interviews, and 7 focus group discussions. Through these activities, we identified water and sanitation stakeholders; located and characterized low-income neighborhoods; identified existing sanitation facilities, practices, and services; and examined sanitation preferences and gender concerns.

## KEY FINDINGS

- 1) **Malindi does not have a sewerage network: therefore, all residents rely on onsite sanitation.** Access to improved sanitation is low (26%) in these low-income neighborhoods (MajiData, 2011). Approximately 1% of low-income residents practice open defecation, and 55% of households in low-income neighborhoods share a toilet (Government of Kenya, 2014). Basic pour-flush latrines connected to an offset pit are the most common form of sanitation, followed by improved pour-flush and cistern-flush toilets. Low-income residents expressed concerns that toilets are currently shared by too many households and also present health risks, especially for children and vulnerable populations, due to their lack of cleanliness. Residents also raised concerns about pits collapsing and lack of privacy when using latrines (i.e., no door or holes in superstructure).
- 2) **There is a preference for water-based sanitation options among low-income residents.** These options include cistern-flush toilets to a holding or septic tank, and pour-flush toilets to an offset holding tank, which use less

water than cistern-flush toilets. It is important to note that water-based solutions are also preferred because the predominantly Muslim population in Malindi primarily uses water cleansing hygiene methods (i.e., they are “washers” instead of “wipers”). Residents also expressed preferences for the following sanitation features: squatting toilets, ceramic or concrete pans, handwashing facilities, and waste receptacles and water for menstrual hygiene management.

- 3) **Most Malindi low-income areas have loose, sandy soil, which makes latrines prone to collapsing.** To minimize the risks associated with pit collapses in sandy soil, there is a preference for off-set pits or fully lined holding tanks. In addition, sandy soil conditions limit pit depth to around 6 meters and septic tanks to around 3 meters. The few low-income areas with rocky soil conditions, however, are able to accommodate deeper pits, though these conditions make it difficult and expensive to excavate. Flooding during the rainy season is also a concern: 56% of low-income areas are prone to flooding (MajiData, 2011).
- 4) **To empty pit latrines, most low-income households rely on informal manual emptying.** Currently, Malindi has two types of mechanized emptying services: one privately-owned vacuum truck and pick-up trucks/canters equipped with a simple pump. These mechanized options are perceived as cost-prohibitive and typically only serve medium- and high-income households. Low-income households instead commonly rely on informal manual pit emptying done at night, as there are no trained manual

emptying groups in Malindi. Manual emptiers either transfer waste into an adjacent pit or deposit it directly into the environment during the rainy season. Low income-area residents expressed the following concerns about informal manual emptying: environmental pollution and disease risks from spillages, unpleasant odors, and that the pits are rarely completely emptied. Additionally, informal manual emptiers are also highly exposed to unsafe fecal sludge.

**5) There is no wastewater or fecal sludge treatment plant in Malindi.** A fecal sludge treatment site is currently under construction, but it was flooded in December 2017. Mechanically emptied fecal waste (i.e., by exhaustor truck or pick-up truck with pump) is deposited at Timboni, an old quarry site managed by MAWASCO, the local water utility. A daily permit from MAWASCO is required to access the quarry site.

**6) Few efforts have aimed to improve sanitation in Malindi.**

Only one sanitation program recently supported the construction and rehabilitation of toilets through subsidies in Malindi town, but on a smaller scale than in Nakuru and Kisumu: the Up-scaling Basic Sanitation for the Urban Poor (UBSUP) program (2013-2018), funded by the Bill and Melinda Gates Foundation and German Development Bank. Condominium sewer systems, where households with indoor, flush-toilets feed into a large, neighborhood septic tank, operate on a small scale in Malindi, serving middle-income government housing areas. One system serves approximately 20 households; however, the system is not always fully functional (i.e., some households are still not connected to the small piped network or can no longer use the system due to blockages). Finally, there is no comprehensive legal framework for the provision of sanitation facilities and services in Kilifi County.



## NEXT STEPS

In Malindi, we are currently conducting detailed cost evaluations and stated willingness-to-pay trials of different sanitation facilities and services. This in-depth assessment includes the following sanitation options: pour-flush pan to holding tank, pour-flush pan to septic tank, and container-based sanitation. Specifically, we are examining willingness-to-pay for different cost structures (i.e., upfront payments and installments) for both landlords and tenants.

We will compare costs and willingness-to-pay to measure the gap between the costs of providing pro-poor sanitation products and services and the amounts that low-income households are able to invest in sanitation improvements. We will apply these gap assessments to develop recommendations for delivering improved sanitation solutions to urban, low-income residents.

## REFERENCES

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