

## CHAPTER 7

# Sanitation infrastructure sustainability challenges case study: Ethiopia

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### Abstract

*This chapter is based on the findings of a cross-sectional study which investigated the high rate of reversion to open defecation (OD) in Sidama, southern Ethiopia. Collapsing toilets, and the lack of availability of durable and affordable toilet options and materials for construction on the market were identified as key reasons for this reversion. The study identified the importance of formative research to identify community needs, financial capabilities, and availability of sanitation technologies, and encouraging successful local innovations as key lessons for sustainability of open defecation free (ODF) status.*

**Keywords:** Latrine sustainability, Sanitation technology, Open defecation, Pit latrine, Pit collapse, Ethiopia

### Methodology

A cross-sectional study carried out in June to July 2013 in Sidama, southern Ethiopia assessed the sanitation infrastructure sustainability challenges in eight kebeles (the smallest administrative unit in the country), four from ODF (open defecation free) and four from non-ODF kebeles. The ODF kebeles had been declared ODF between five months to two years previously. A total of 1,677 households, 49.7 per cent from ODF and 50.3 per cent from non-ODF kebeles were selected. Household data was collected through questionnaires and observations. In addition, eight focus group discussions (FGDs) were held in each kebele, with 8–12 participants in each group.

### Findings

#### *Quantitative data*

In ODF villages, nearly 80 per cent of households had a toilet, in non-ODF villages the figure was only 59 per cent. The number of functional toilets was approximately 75 per cent in ODF and 55 per cent in non-ODF communities meaning 25 per cent in ODF communities were still practising OD. Thirty per cent of toilets in ODF and 22 per cent in non-ODF villages did not have

a proper soil slab. Fifty-eight per cent of toilets in ODF and 55 per cent of toilets in non-ODF kebeles had superstructures. In addition, 20 per cent of the toilets were flood-prone, and more than 39 per cent of the toilets were not considered hygienic.

### ***Qualitative data***

Various challenges to use were revealed. One of the main challenges was durability, with collapse of pit latrines shortly after construction. One respondent said:

Temporarily, people construct their toilet by using any available material, mainly using eucalyptus tree logs 'Terb'. This does not last long as it decomposes easily ... the soil applied on the logs facilitates the decomposition. Therefore, within a year, it falls down. Mainly in the rainy season rain just falls on it as there is no rain protection [superstructure].

Durability affected confidence in using the toilets, 'because of fear of collapse, people defecate near the toilets...' Availability and affordability were also key challenges. There was agreement among participants that due to population increases and a reduction in forest cover, strong wood is either not available, or it is prohibited to cut the trees down. Consequently, they had to buy a stronger locally available wood ('kench') to make a toilet slab or a proper superstructure. However, 'kench' is not affordable for many of the families. One respondent said:

... for my own household, I can construct the toilet in a good way so that I can use it as long as possible. But, that will be done when I have money and able to buy the good quality woods. We don't afford to buy them as one kench costs 20 birr (US\$1).

Another respondent said, 'Grass is not available in the environment that can be used to cover the roof... We apply leaves, and when the leaves, dry and fall on the ground it becomes open'.

Communal toilets are even more problematic. In addition to the lack of strong wood, there is also the fact that there is no one responsible for them. One respondent mentioned, 'Once when I was using a communal toilet, my leg entered the hole because ... the superstructure collapsed'.

To combat the issue of durability some households have used locally carved stone slabs, which are resistant to decomposition and more durable. These local innovations should be supported and encouraged.

Even when families had financial resources to construct good quality toilets, more durable materials were not easily available in the market or the surrounding area. The current Community-Led Total Sanitation approach encourages households to construct using locally available materials with no infrastructure options given, and no consideration of financial capabilities. Most

toilet owners (94 per cent) were interested in improved toilet options and some said they would need partial or full government support. However, 64 per cent mentioned they would be able to afford to buy new sanitation technologies.

### Key lessons learnt

- A lack of appropriate locally available and affordable options means some facilities do not fulfil the requirements needed to climb onto the first rung of the sanitation ladder.
- Formative research should be used to identify community needs, financial capabilities, and availability of sanitation technologies.
- Government and NGOs should promote appropriate simple, affordable, and sustainable options that can be applicable to different geographic locations and are resilient to the environment and suitable to local soil conditions.
- Different options for different socio-economic conditions should also be promoted.
- Post-triggering, professionals should support communities choosing an appropriate location and assist in the construction of good pit latrines with locally available materials.
- Local innovations that have proven to be successful, such as the locally carved stones, should also be encouraged and supported.
- If the cutting of trees goes against the law, the government or other stakeholders need to provide other options.

### About the author

**Hunachew Beyene** is an employee of Hawassa University and is currently working on his PhD. He has been teaching Environmental Health courses such as on-site sanitation, and conducted research focusing on the effect of sanitation interventions on diarrhoeal disease, intestinal parasites, and trachoma in southern Ethiopia.