Experience of Faecal sludge management in Arba Minch Town, Ethiopia

Kinfe Kassa
Arba Minch University, Arba Minch Ethiopia
Presentation outline

• Introduction
• Type of toilet
• Desludging
• Lesson learned

All the photo in the presentation taken by Kinfe
Introduction

• In Arba Minch town most of the sanitation infrastructure is low
• Majority of the toilets are shallow
  – fragile soil or
  – rocky ground
• Besides the sludge is a mixture of soil and solid waste
  • Soil texture and no pit wall lining
  • Low user knowledge
    • No relevant curriculum at school
    • Majority of the dwellers are migrants from country sides
  – Truck desludging most of the time is impossible
Type of toilet at Arba Minch town from the transect survey on 404 households (ROSA 2007)

Most of the toilets are pit latrines of low standards and about 10% use open defecation. Gorges and bush areas are potential sites for open defecation.
Ecosan Toilets: urine diversion dry toilets
130 UDDT
700 Fossa alterna
Desludging
Truck desludging

The sludge dry at fast rate because the changing disposal site and high temperature conditions.
Sludge reused although unsafely

Untreated wastewater irrigation in dry season after breaking a sewerage line

Farmers pay or agree to get sludge for their farms
• Donkey cart is used to transport UDDT products to co-composting sites
Manual desludging

Toilet owners prefer manual emptier because they are cheaper.
A team of Manual pit emptiers at Arba Minch, Ethiopia

They are often given offensive titles

Pit Emptiers - generally come from low-income communities living in informal settlements.
How they do it? (11pm- 5am)

Addition of common salt in the pit and wait until worms are deactivated

Mix together before starting desludging

Transfer from one person to the other

Transport to the nearby pit in this case
Dispose FS in another pit or into new pit

Liquor drinking in between desludging and at the beginning
The pit emptier is standing on a wooden pole erected from the bottom of the pit (3 m deep) and held by his hand the horizontal pole while picking floating solid waste. He breathes in between to avoid suffocation. Slippery and fall can happen easily.
Desludging of waste stabilization pond is done with pit Emptiers. They are usually cheap and also the pond problems can not be handled with modern equipment's.

Cleaning anaerobic pond and connection pipes

Pit Emptier in more than 2 meter deep Manhole to remove blockage by his bare foot.

They do not use protective measures.
Some of the health risk exposures by pit emptiers identified from focus group discussions are:

- Pit collapse while working
- Bite by worms and reptiles
- Exposed to sharp objects
- Although they take alchol as a remedy, they are exposed to nasal and oral inhalation of harmful gases (such as methane, ammonia and hydrogen sulfide)
Oral, nasal and dermal exposure to pathogens in FS because they drink during and after desludging with unwashed hands

- All of the manual emptiers’ in the town consume strong alchol during desludging and in their life
- Other people do not want to associate socially with pit emptiers
Lesson Learned

Although private truck desludgers are started to be involved in the business, still manual pit emptiers are doing the major job in the town, but neglected.

Therefore the municipality should offer:
- Training in hygiene
- Supply of proper tool and
- Formalizing the sector

In order to improve the major faecal sludge handling in the town.
Thank you for your attention!