Status of Urban Sanitation in the Capital of Ethiopia & the Urgency of Adopting an Integrated FSM System

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Introduction

- 60% of the disease burden is related to poor sanitation in Ethiopia (Ethiopian-MoH, 2013)

- What is the current state of sanitation & indicators used to monitor?

**Access to improved sanitation with proper utilization & Fecal Sludge Management (FSM) system as defined by WHO/UNICEF.**

**An improved sanitation facility** is defined as one that hygienically separates human excreta from human contact (WHO/UNICEF, 2008).
Objective

• To investigate current state of access to improved sanitation
• To map trends of sanitation in urban areas
• To determine the chain of FSM system with current practices
Addis Ababa (Ethiopia)

- Total area = 527 km²
- Population $\rho = 5165$ persons/km²
- It is considered as one of the largest cities in Africa with more than 3 million residents.
- It has 10 sub-cites
- The study area is located in urban slums of Addis Ababa

- Cross-sectional survey in the capital city (2013)

- National inventory results of 2014
- Sample survey of Ethiopian CSA of 2014
Results

1. Current state of access to improved sanitation

- 88.6% urban slums used unimproved sanitation facilities
- National urban sanitation coverage = 17.5%
- 95.5% of national population have no access to improved sanitation

Trends of access to improved sanitation in Addis Ababa & urban residents of Ethiopia in relation to MDG
2. User behavior & pit emptying practice in urban slums

- ≈ 95% toilets were not clean
- 88% of HHs use municipal emptying services
- 7.8% HHs release the FS to the nearby rivers
- 4.2% use private pit emptying or sewer system.
- Expensive & limited access to pit emptying forced most of the residents to use full toilets (≈ 50% of the toilets were full) see the photos

3. Fecal sludge management (FSM) system

- In the chain of FSM system, the containment was mainly dry toilets (> 74% in Addis Ababa & 90.8 % urban slums of Addis Ababa)
- Direct disposal of partial treated & untreated FS to the environment (land & water)
- Resource recovery oriented FSM system almost nil
The chain of FSM system & current practices of FSM in Addis Ababa.

**Conclusion:**
- Current access to improved sanitation is far from the MDG target
- Declining trend of access in sanitation
- Safe & resource recovery oriented FSM system is merely absent that even totally nullify the current access to IS
Why is Bill Gates drinking poop-water?

Source: http://www.treehugger.com

Sanitation solution should be all-in-one with a closed-loop !!!

Thank you!!!!
Introduction
In the face of high urbanisation & demand for basic sanitation, there are debts that urbanisation in Africa has been mostly improving in one hand &衰退 on the other hand in the recent decades, investigating the current level & trend of access & identifying the underlying challenges to sanitation systems development in urban slums will be useful for planning to promote sustainable development goals (post 2015).

An improved sanitation facility is defined as one that hygienically contains & manages excreta & waste, safely & resource recovery oriented FSM system is totally absent in Addis Ababa that even 88.38% of HHs in urban slums of Addis Ababa used municipal emptying services & 7.84% HHs connected their toilet facilities to the city sewage network (Ethiopia). There is no effective waste management due to lack of solid waste management facilities in urban slums of Addis Ababa in line to the WHO/UNICEF definition of access to improved sanitation.

Material and methods
Study design; A cross-sectional survey was conducted in Oct. 2013 using both observation & interviews. We also included a desk review of other surveys & administrative government reports.

Sampling; A multi-stage sampling technique was adopted. A total of 403 HHs were randomly selected from 5 cities & 10 districts.

Current state of access to improved sanitation

3. World Bank, Ethiopia
4. Ethiopia Ministry of Water, Irrigation & Energy, & Ethiopia
5. National urban sanitation coverage is also very low = 17.5% in Ethiopia.

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