20th AfWA International Congress and Exhibition 2020
Breaking new grounds to accelerate access to water and sanitation for all in Africa

Enhancing waterborne toilets to reduce water usage in schools: Experience from Kampala

23rd – 24th February 2020, Kampala, Uganda

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Kampala, Uganda

189 Km²

Population 1.5 million

Daytime Population 3 million

live in informal settlements

CAPITAL CITY

- Uganda's Capital and one of the fastest growing cities in sub-Saharan Africa

GEOGRAPHY AND LANDSCAPE

- At the Peripheral of Lake Victoria
- A city of hills and valleys with natural wetlands and streams

URBANISATION

- Rate of urbanisation is 5.2%.
- Expansion of Informal developments over the past years

POPULATION

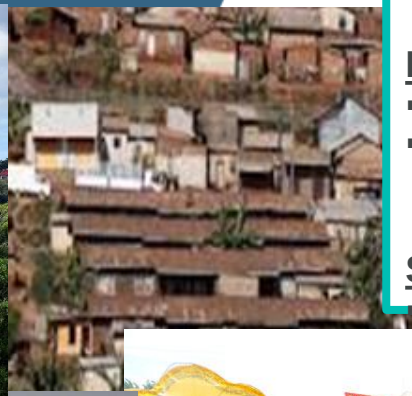
- 1.5 million resident population
- Estimated to double during the day

ECONOMIC POWER CENTER

- Contributes over 60% of country's GDP
- Hot spot for industries, commercial and business enterprises

SOCIAL-CULTURAL HUB

- Hub for Cultural, religious, recreation and entertainment



SCHOOL SANITATION AT A GLANCE

- Worldwide: 2 billion people have no access to proper sanitation, 73 million still practice OD (WHO/UNICEF, 2019) and 620 million children lack basic sanitation at school (WHO/UNICEF, 2018a)
- Worldwide over 440 million school days are missed annually by children due to WASH-related illnesses (Hullalli et al., 2017).
- Access to sanitation in schools in Uganda: Pupil to stance ratio, 52:1 and in Kampala public schools 57:1 (MoES, 2016):, recommended 40:1 (Public Health Regulations, 2000);
- All schools in Kampala must use waterborne toilets: (National Physical Planning Standards, 2011).
- 70 – 75% of water is used in school in toilets (Water Corporation, 2018)
- In Kampala, School administrators deny pupils to use waterborne toilets to save water leading to open defection and urination (Kimbugwe *et al.*, 2018). 10% of the toilet stances in public schools are in good condition for use but are not accessible in order to save water

ENHANCING VIP LATRINE TO CHANNEL FLUSH TOILET

VIP KEY ELEMENTS

1. Containment pit
2. Drop hole
3. No flushing reservoir

CHANNEL FLUSH KEY ELEMENTS

1 Channel with slope 12% to 15%

2. Lined hole with sato-pan
3. Reservoir for flushing channel intermittently

CONSTRUCTION OF CHANNEL FLUSH TOILET

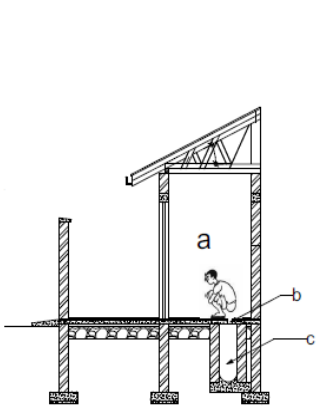


Fig. 1

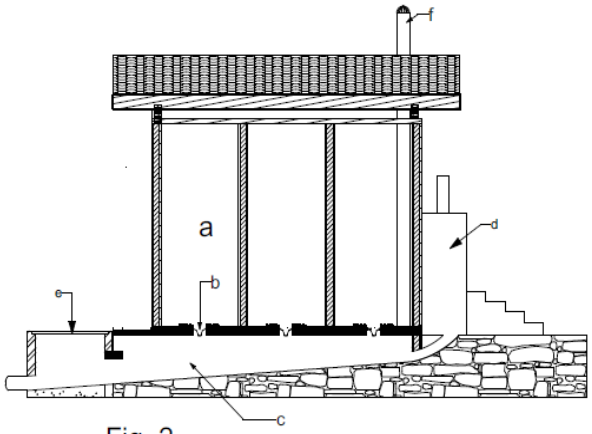


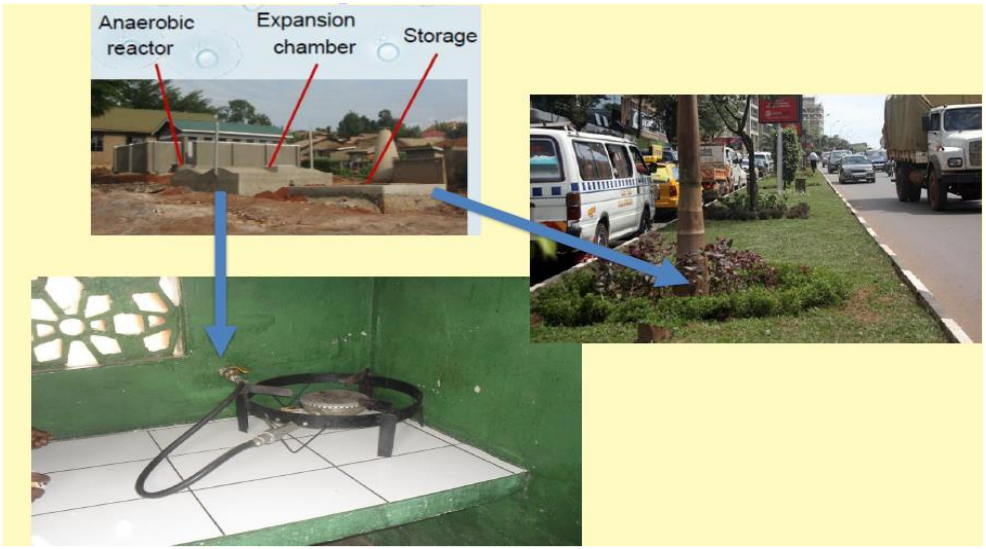
Fig. 2

a-Toilet stance,b-Sato panfixed in squat hole,c-channel,d-water resevoir,e- inspection chambe
f- vent pipe

Key elements

1- Channel: slope 12% to 15% finished smooth with bifurcations to keep surface wet

2. Flushing reservoir: Able to hold about 60 liter at a height of 1.5m above ground



ADVANTAGES AND CHALLENGES OF USING CHANNEL FLUSH TOILETS

ADVANTAGES

- Water usage: 90% water saving compared to flushing toilet system
- Biogas technology easily incorporated
- Reduction in emptying frequency:
- very low maintenance costs

CHALLENGES

- Requires having an attendant
- Foul stench is common when not well ventilated
- surface drying when the toilet is not in use for a long period

KCCA

KAMPALA CAPITAL CITY AUTHORITY

For a better City