

# SafiSan: Toilet Use, Emptying, Transport & Treatment



people, toilet, emptying, safety, SaniGo, Sanitation Teams, transport, treatment, incentives, partnerships, **poo**, **pee**



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P.O. Box 49699-00100 Tel: (020) 272 9071, 16, 19 EMail: [info@waterfund.go.ke](mailto:info@waterfund.go.ke) Site [www.waterfund.go.ke](http://www.waterfund.go.ke)



# Toilets & the Sanitation Value Chain



This presentation focuses on toilets but also on the importance of:

1. Emptying toilets
2. Transport
3. Disposal and treatment
4. Reuse

In other words; we will address the entire **Sanitation Value Chain**



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# More sustainable sanitation: The UDDT

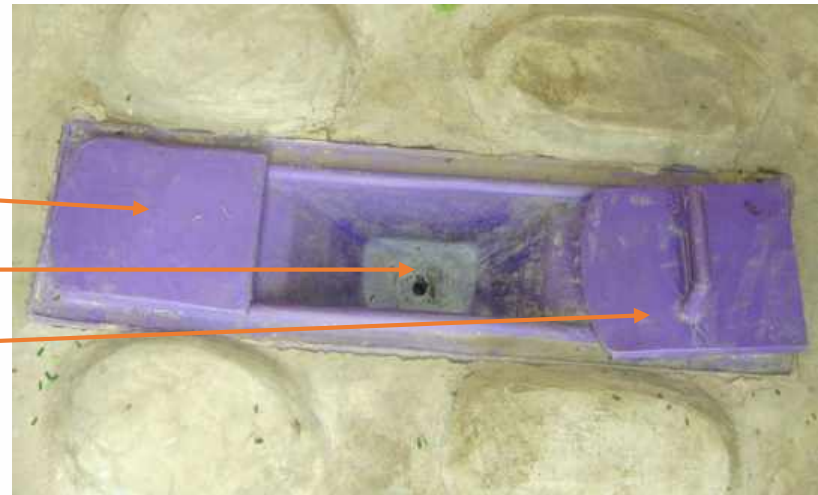
## What is a UDDT?

1. UDDT stands for: Urine Diverting Dry Toilet
2. A UDDT or a **dry toilet**:
  - Is a simple, low-cost, on-site toilet
  - functions without water and
  - has a divider so that the user, with little effort, can divert the urine away from the faeces

Faeces vault 1

Urine section

Faeces vault 2



# How is a UDDT used?

- Every long call visit should be accompanied by pouring ash into the vault
- Vaults are the section of the toilets where the faeces are stored
- Pouring of ash on the faeces allows it to dry fast and using ashes also kills most of the disease producing agents (pathogens) found in faeces
- Therefore ash always has to be available in the toilet



Vault 1

Vault 2



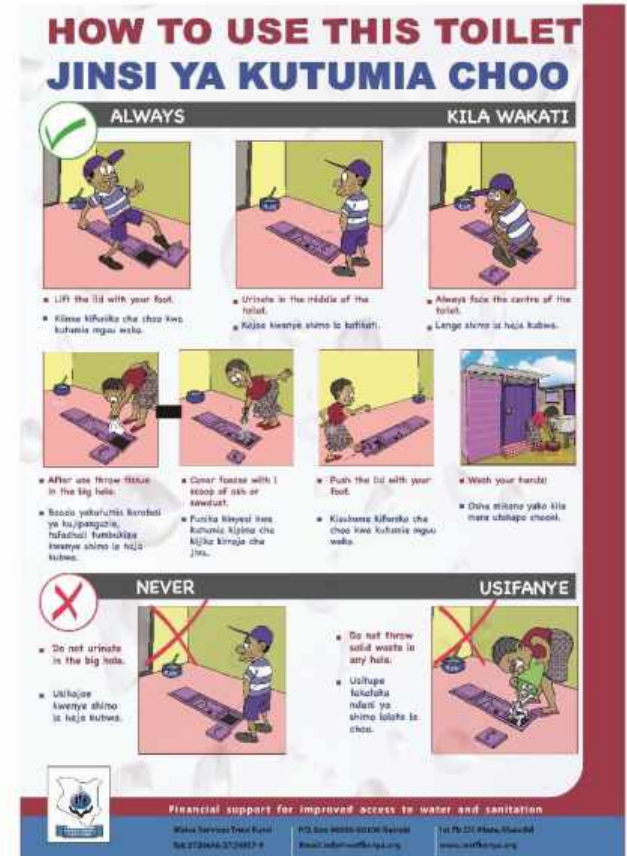
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# How is a UDDT used? (continued)

- How to use a UDDT may not be obvious to some users
- Users may be hesitant to use it because they don't know how to separate the urine and the faeces
- Education is essential in achieving acceptance



Posters will be available in all the dry toilets



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# How should a UDDT be used?

- Put a scoop or a cupful of ash into the big hole **ONLY**, no ash should spill on the urine hole/section to avoid blockage
- Replace the lid once you have finished
- Please ensure that you aim at the urine hole whilst urinating. Do not urinate in the big hole
- **After using the toilet: Always wash your hands with soap and water!**



Ash bucket - Ash should be poured in the faeces hole after every long call



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# Common mistakes that are made when using a UDDT

- Careless pouring of ash in the urine hole which can block the urine pipe
- Dumping solid waste such as sanitary towels and diapers (non-biodegradable items) into the faeces chamber
- Defecating in the urine hole, which blocks the urine pipe (a mistake mostly made by children)



*Blocked urine pipe*



## Common mistakes that are made when using a UDDT

- Urinating in the faeces chamber. A mistake mostly made by children and men
- Anal cleansing water directed to the faeces chamber
- Bathing inside the toilet



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# Once the vault is full, what happens? (1)

- Once the vault is full, users are requested to cover it with the lid that has no handle. This shows that it is not in use
- Users are taught to ensure that the lid is tight so that it is not opened by mistake!
- No one is allowed to use the full vault during the treatment period!
- Users have to ensure that the full vault has enough ash for drying and leave it to compost for a minimum period of 6 months
- The longer it stays... the better and safer the quality will be for reuse



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## Once the vault is full, what happens? (2)

- The vault may be opened from time to time by users to monitor the process
- If some sections require a little bit more ash, users should add some ash
- More ash can be added and mixed in with a spade for uniform drying
- This can be done also when the vaults are full
- **People should wash their hands after touching the contents of the vaults**



# How does the content of the vault look like?



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# Emptying UDDTs: Done by trained professionals

- UDDTs and other types of (SafiSan) toilets should not be emptied by the users themselves
- Emptying should be done by trained professionals: the **SafiSan Sanitation Teams**
- These **Sanitation Teams** can consist of former manual emptiers
- After having received their training the new sanitation teams will receive a certificate



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# Emptying UDDTs: Done by trained professionals

- Sanitation teams use the necessary safety equipment
- The SaniGo cart was developed by the WSTF to ensure safe emptying transport and disposal
- Every Sanitation Team will have access to a SaniGo
- SaniGos have been approved by NEMA and the Ministry of Health



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# Emptying UDDTs: Best practices & related risks

- The content of a UDDT vault may have worm eggs (helminths) since they a long time to die, even in our hot tropical climate
- If the vault is emptied before the 6 month treatment period is over the content may not be harmless
- If the UDDT is not used properly the content may not be harmless
- That's why Sanitation Teams always have to wear protective equipment
- They should always wash their hands with soap and water after emptying



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# Transport & treatment

- The content of the UDDT is relatively harmless (as compared to untreated sludge)
- However, the content of a UDDT should **not** be dumped in the environment (for example, drains, open space, a river, etc.)
- There is need for further treatment
- Further treatment to reduce health risks (kill the worm eggs) →
- Further treatment to produce sellable soil conditioner →



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# Treatment: The Composting Shed

The dehydrated faeces should only be taken to the:

- **Decentralised Treatment Facility (DTF)** or to the
- **Composting Shed**





# Treatment: The Decentralised Treatment Facility



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# Why do we need a DTF?

## THE SANITATION VALUE CHAIN



This also refers to faecal sludge (FS) removed by exhausters / manually from septic tanks or latrines

- UDDT: matter does often not comply with required standards due to improper use ► collected excreta are still wet and not completely stabilised ► safe disposal and reuse not possible
- Septic tanks: incomplete treatment (only primary treatment) ► safe disposal/reuse of faecal sludge is not possible
- Latrines: emptied human excreta contains all kinds of pollutants ► requires further treatment



# Why do we need a DTF?

## THE SANITATION



~~Environmental Pollution  
Public Health Problems~~

- ▶ So a DTF intends to close the Sanitation Value Chain by allowing for:
  - Adequate treatment of FS / waste water (WW) / UDDT matter
  - Safe disposal of treated effluent to the environment
  - Reuse of water for irrigation
  - Reuse of dried sludge as soil conditioner
  - Reuse of compost as fertiliser

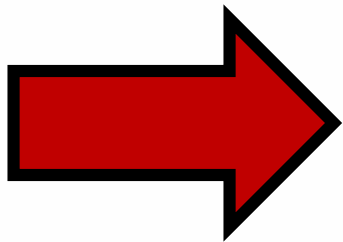


# Why do we need a DTF?

## THE SANITATION



~~Environmental Pollution  
Public Health Problems~~



Access to Adequate Sanitation for residents of Urban Low Income Areas (LIAs)



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# What is treated?

A DTF treats **human excreta** roduced in urban LIAs

- ▶ **Faecal Sludge (FS)** removed by **exhauster trucks** from septic tanks connected to (pour) flush latrines or VIP latrines, or manually removed from pit latrines
- ▶ (Partly) dried organic matter from **UDDTs**
- ▶ **Wastewater (WW)** generated in Toilets/latrines and conveyed through a (simplified) sewer system (*to be approved by WSTF*)



# What is NOT treated?

Never to be treated are:

- X **Greywater** (from laundry, kitchen, etc.) due to low pollution loads that would negatively affect the treatment performance of the DTF
- X **Storm water** as even co-treatment is not beneficial as the treatment capacity of the DTF must then be much higher



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# Emptying, transport, treatment and SafiSan Project **training**

Staff members of the Water Service Providers (WSPs) and the County Resident Monitors (CRMs) will receive in-depth training on the various aspects of decentralised treatment:

- How to identify & secure an appropriate site for the DTF/composting shed?
- How to construct a DTF/composting shed?
- How to operate a DTF/composting shed?

The **SafiSan Toolkit** contains all the training materials & tools (see Module



# Thank You!



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