The Sanitation Decision Support tool

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Results of the Sanitation Decision Support Tool. The tool was created by WASTE (www.waste.nl) and the Akvo Foundation (www.akvo.org), in order to assist people in choosing sanitation technologies. We hope this tool proves useful, any comments can be send to m.t.westra@akvo.org.

Session information
Date: Fri Sep 18, 2020
Time: 16:08:42

Options chosen

Water supply (one possible)
- none
- fetched / hand-pump / standpipe / tanker
- **connection**

Space availability (one possible)
- large
- medium/large
- medium
- **small/medium**
- small

Flood prone (one possible)
- not affected
- frequent (low-lying area)

Groundwater table (one possible)
- shallow
- **medium**
- deep

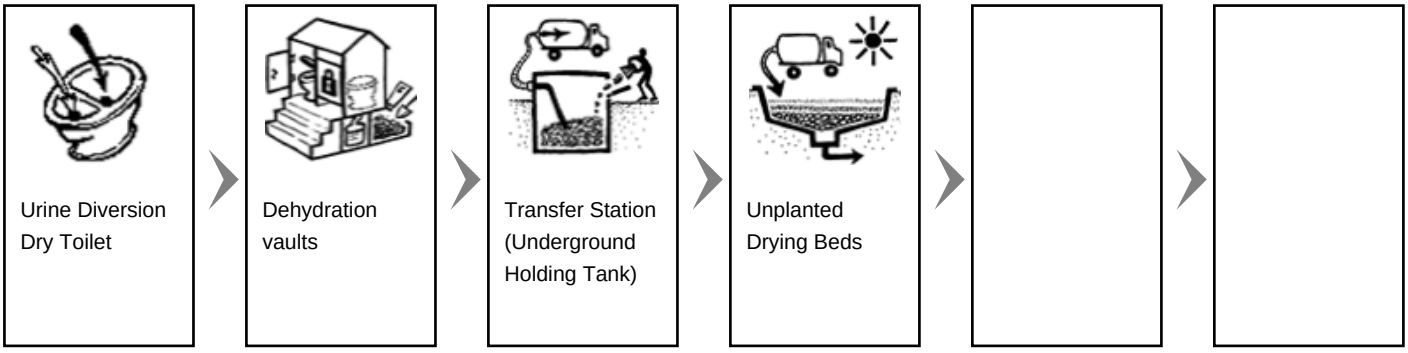
Terrain / Topography / Slope (one possible)
- **flat**
- slope

Vehicular accessibility (one possible)
- no access
- **limited / narrow access**
- full access

Soil type (one possible)
- clayey
- silty
- **sandy / gravelly**
- rocky

Anal cleansing method (more possible)
- **water**
- **soft paper**
- hard or bulky

Selected technologies



Links to Akvopedia articles

- Urine Diversion Dry Toilet:
  http://www.akvo.org/wiki/index.php/Urine_Diverting_Dry_Toilet
- Dehydration vaults:
  http://www.akvo.org/wiki/index.php/Dehydration_Vaults
- Transfer Station (Underground Holding Tank):
  http://www.akvo.org/wiki/index.php/Transfer_Station_-_Underground_Holding_Tank
- Unplanted Drying Beds:
  http://www.akvo.org/wiki/index.php/Unplanted_Drying_Beds

Short descriptions

Urine Diversion Dry Toilet

A Urine Diverting Dry Toilet (UDDT) is a toilet that operates without water and has a divider so that the user, with little effort can divert the urine away from the faeces. The UDDT toilet is built such that urine is collected and drained from the front area of the toilet, while faeces fall through a large chute (hole) in the back. Depending on the Collection and Storage/Treatment technology that follows, drying material such as lime, ash or earth should be added into the same hole after defecating.

Relevant options

Dehydration vaults

Dehydration vaults are used to collect, store and dry (dehydrate) faeces. Faeces will only dehydrate when the vaults are watertight to prevent external moisture from entering and when urine and anal cleansing water are diverted away from the vaults. When urine is separated from faeces, the faeces dry quickly. In the absence of moisture, organisms cannot grow and as such, smells are minimized and pathogens are destroyed. Each vault is sized to accommodate six months of faeces accumulation which in turn, results in a six month drying time in the out-of-service vault. Two alternating vaults allow the faeces to dehydrate in one vault while the other vault fills. When one vault is full it is sealed with a lid and the Urine Diversion Dry Toilet is moved to the second vault. While the second vault fills up, the faeces in the first vault slowly dry and decrease in volume.

Relevant options

At option **Space availability (one possible)** you have selected **small/medium**. This means that in your situation,Dehydration vaults might be a suitable technology. This depends on: **Attention to space requirements**

At option **Vehicular accessibility (one possible)** you have selected **limited / narrow access**. This means that in your situation,Dehydration vaults might be a suitable technology. This depends on: **Special care in case of emptying and transport services requirement. Potential use of small vehicles**

At option **Anal cleansing method (more possible)** you have selected **water**. This means that in your situation,Dehydration vaults might be a suitable technology. This depends on: **Water must be diverted from the toilet to maintain dry conditions**

Transfer Station (Underground Holding Tank)

Sometimes termed Underground Holding Tanks, Transfer Stations act as intermediate dumping points for faecal sludge when it cannot be easily transported to a (Semi-) Centralized Treatment facility. A vacuum truck must empty Transfer Stations when they are full. Manual, or small scale sludge emptiers who use the MAPET or the Gulper, for example, dump the sludge in a local transfer station rather than either a) dumping it illegally or b) trying to travel to a distant collection point. When the Transfer Station is full, a vacuum truck empties the contents and takes the sludge to a suitable treatment facility. If the municipality or sewerage authority is operating the Transfer Station they may charge for permits to dump in the Transfer Station to offset the cost of maintaining the facility. The Transfer Station consists of a parking place for the vacuum truck or sludge cart, a connection point for the discharge hose, and a storage tank. The dumping point at the Transfer Station should be built low enough to minimize spills when labourers are manually emptying their sludge carts. Additionally, the Transfer Station should include a vent, a trash screen to remove large debris (garbage) and a washing facility for vehicles.

Relevant options

At option **Space availability (one possible)** you have selected **small/medium**. This means that in your situation,Transfer Station (Underground Holding Tank) might be a suitable technology. This depends on: **Depending on the size of the tank, space availability could be a problem**

At option **Flood prone (one possible)** you have selected **not frequent**. This means that in your situation,Transfer Station (Underground Holding Tank) might be a suitable technology. This depends on: **Ensure sealing of the tank. Risk of water infiltration and overflow as well as leaking and groundwat**

At option **Groundwater table (one possible)** you have selected **medium**. This means that in your situation,Transfer Station (Underground Holding Tank) might be a suitable technology. This depends on: **Ensure sealing of the tank. Risk of water infiltration and overflow as well as leaking and groundwat**

At option **Vehicular accessibility (one possible)** you have selected **limited / narrow access**. This means that in your situation,Transfer Station (Underground Holding Tank) might be a suitable technology. This depends on: **Requires some sort of access for desludging. Special vehicles might be required**

Unplanted Drying Beds

An Unplanted Drying Bed is a simple, permeable bed that, when loaded with sludge, collects percolated leachate and allows the sludge to dry by evaporation. Approximately 50% to 80% of the sludge volume drains off as liquid. The sludge however, is not stabilized or treated. The bottom of the drying bed is lined with perforated pipes that drain away the leachate. On top of the pipes are layers of sand and gravel that support the sludge and allow the liquid to infiltrate and collect in the pipe. The sludge should be loaded to approximately 200kg TS/m2 and it should not be applied in layers that are too thick (maximum 20cm), or the sludge will not dry effectively. The final moisture content after 10 to 15 days of drying should be approximately 60%. A splash plate should be used to prevent erosion of the sand layer and to allow the even distribution of the sludge. When the sludge is dried, it must be separated from the sand layer and disposed of. The effluent that is collected in the drainage pipes must also be treated properly. The top sand layer should be 25 to 30cm thick as some sand will be lost each time the sludge is manually removed.

Relevant options