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: Mon Jun 22, 2020
Time: 18:57:45

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**

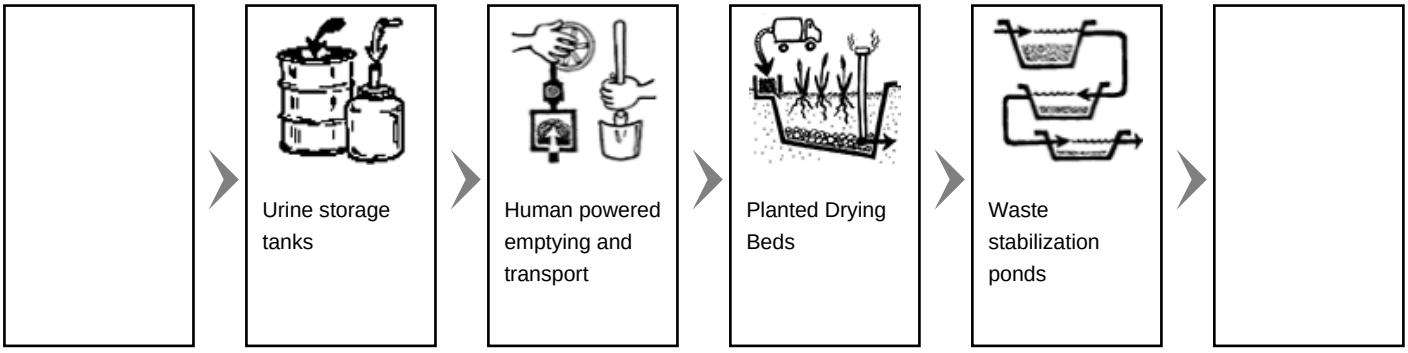
Terrain / Topography / Slope (one possible)
- **flat**
- slope

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 storage tanks:
  http://www.akvo.org/wiki/index.php/Storage_tanks
- Human powered emptying and transport:
  http://www.akvo.org/wiki/index.php/Human-Powered_Emptying_and_Transport
- Planted Drying Beds:
  http://www.akvo.org/wiki/index.php/Planted_Drying_Beds
- Waste stabilization ponds:
  http://www.akvo.org/wiki/index.php/Waste_Stabilization_Pond

Short descriptions

Urine storage tanks

When urine cannot be used immediately or transported using a Conveyance Technology (i.e. Jerrycans) it can be stored onsite in containers or tanks. The Storage Tank must then be moved or emptied into another container for transport.

Relevant options

Human powered emptying and transport

Human-powered Emptying and Transport refers the different ways in which people can manually empty and/or transport sludge and septage. Human-powered Emptying and Transport of pits and tanks can mean one of three things: 1) using buckets and shovels; 2) using a hand-pump specially designed for sludge (e.g. the Pooh Pump or the Gulper); and 3) using a portable, manually operated pump (e.g. MAPET: MAnual Pit Emptying Tech.).

Relevant options

Planted Drying Beds

A Planted Drying Bed is similar to an Unplanted Drying Bed with the benefit of increased transpiration. The key feature is that the filters do not need to be desludged after each feeding/drying cycle. Fresh sludge can be applied directly onto the previous layer; it is the plants and their root systems that maintain the porosity of the filter. This technology has the benefit of dewatering as well as stabilizing the sludge. Also, the roots of the plants create pathways through the thickening sludge to allow water to escape more easily. The appearance of the bed is similar to a Vertical

Flow Constructed Wetland. The beds are filled with sand and gravel to support the vegetation. Instead of effluent, sludge is applied to the surface and the filtrate flows down through the subsurface to collect in drains. A general design for layering the bed is: (1) 250mm of coarse gravel (grain diameter of 20mm); (2) 250mm of fine gravel (grain diameter of 5 mm); and (3) 100–150mm of sand. Free space (1m) should be left above the top of the sand layer to account for about 3 to 5 years of accumulation. When the bed is constructed, the plants should be planted evenly and allowed to establish themselves before the sludge is applied. Echinochloa pyramidalis, Cattails or Phragmites are suitable plants depending on the climate. Sludge should be applied in layers between 75 to 100mm and should be reapplied every 3 to 7 days depending on the sludge characteristics, the environment and operating constraints. Sludge application rates of up to 250kg/m2/year have been reported. The sludge can be removed after 2 to 3 years (although the degree of hygienization will vary with climate) and used for agriculture.

Relevant options

Waste stabilization ponds

Waste Stabilization Ponds (WSPs) are large, manmade water bodies. The ponds are filled with wastewater that is then treated by naturally occurring processes. The ponds can be used individually, or linked in a series for improved treatment. There are three types of ponds, (1) anaerobic, (2) facultative and (3) aerobic (maturation), each with different treatment and design characteristics. For the most effective treatment, WSPs should be linked in a series of three of more with effluent being transferred from the anaerobic pond to the facultative pond and finally the aerobic pond.

Relevant options

At option **Space availability (one possible)** you have selected **medium/large**. This means that in your situation,Waste stabilization ponds might be a suitable technology. This depends on:
Depending on the size of the ponds, space availability could be a problem

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