The Sanitation Decision Support tool

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 Nov 30, 2020
Time: 01:59:02

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**

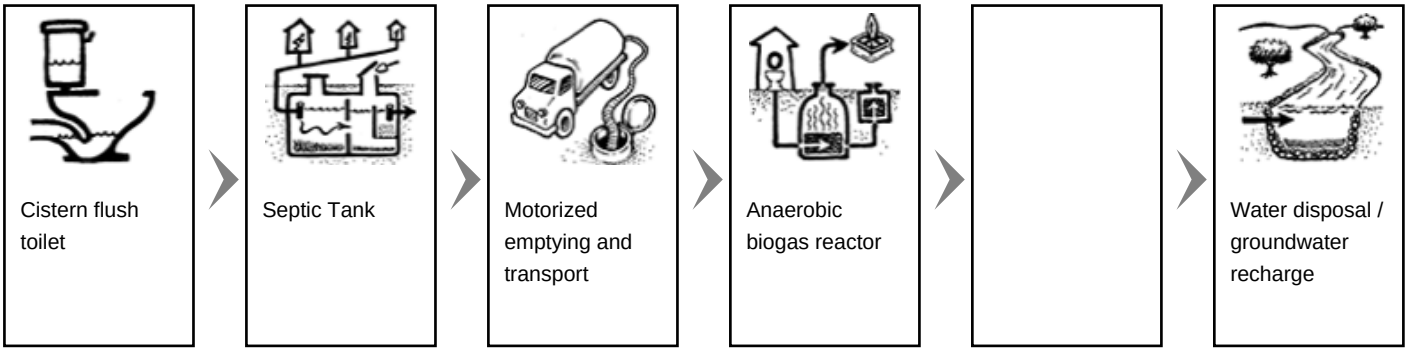
Terrain / Topography / Slope (one possible)
- flat
- **slope**

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

- Cistern flush toilet:
  http://www.akvo.org/wiki/index.php/Cistern_Flush_Toilet
- Septic Tank:
  http://www.akvo.org/wiki/index.php/Septic_Tank
- Motorized emptying and transport:
  http://www.akvo.org/wiki/index.php/Motorized_Emptying_and_Transport
- Anaerobic biogas reactor:
  http://www.akvo.org/wiki/index.php/Anaerobic_Biogas_Reactor
- Water disposal / groundwater recharge:
  http://www.akvo.org/wiki/index.php/Water_Disposal_-_Groundwater_Recharge

Short descriptions

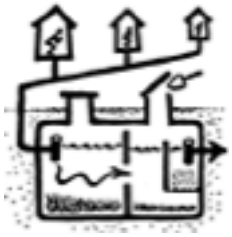
Cistern flush toilet

Relevant options

The Cistern Flush Toilet is usually porcelain and is a mass-produced, factory made User Interface. The Flush Toilet consists of a water tank that supplies the water for flushing the excreta and a bowl into which the excreta are deposited. The attractive feature of the Flush Toilet is that it incorporates a sophisticated water seal to prevent odours from coming back up through the plumbing. Depending on the age and design of the toilet, approximately 3 to 20L of water may be used per flush.

Septic Tank

A Septic Tank is a watertight chamber made of concrete, fibreglass, PVC or plastic, for the storage and treatment of blackwater and greywater. Settling and anaerobic processes reduce solids and organics, but the treatment is only moderate. A Septic Tank should typically have at least two chambers. The first chamber should be at least 50% of the total length and when there are only two chambers, it should be 2/3 of the total length. Most of the solids settle out in the first chamber. The baffle, or the separation between the chambers, is to prevent scum and solids from escaping with the effluent. A T-shaped outlet pipe will further reduce the scum and solids that are discharged. Liquid flows into the tank and heavy particles sink to the bottom, while scum (oil and fat) floats to the top. With time, the solids that settle to the bottom are degraded anaerobically. However, the rate of accumulation is faster than the rate of decomposition, and the accumulated sludge must be removed at some point. Generally, Septic Tanks should be emptied every 2 to 5 years, although they should be checked yearly to ensure proper functioning. The design of a Septic Tank depends on the number of users, the amount of



water used per capita, the average annual temperature, the pumping frequency and the characteristics of the wastewater. The retention time should be designed for 48 hours to achieve moderate treatment.

Relevant options

At option **Terrain / Topography / Slope (one possible)** you have selected **slope**. This means that in your situation,Septic Tank might be a suitable technology. This depends on: **Special attention to land slide**

Motorized emptying and transport

Motorized Emptying and Transport refers to a vacuum truck or another vehicle equipped with a motorized pump and a storage tank for emptying and transporting faecal sludge, septage and urine. Humans are required to operate the pump and manoeuvre the hose, but they do not lift or transport the sludge.

Relevant options

At option **Terrain / Topography / Slope (one possible)** you have selected **slope**. This means that in your situation,Motorized emptying and transport might be a suitable technology. This depends on: **Special attention to heavy loads in steep slopes**

Anaerobic biogas reactor

An Anaerobic Biogas Reactor is an anaerobic treatment technology that produces (a) a digested slurry to be used as a soil amendment and (b) biogas which can be used for energy. Biogas is a mix of methane, carbon dioxide and other trace gases that can be easily converted to electricity, light and heat.

Relevant options

At option **Terrain / Topography / Slope (one possible)** you have selected **slope**. This means that in your situation,Anaerobic biogas reactor might be a suitable technology. This depends on: **Special attention to land slide**

Water disposal / groundwater recharge

Treated effluent and/or storm water can be discharged directly into receiving water bodies (such as rivers, lakes, etc.) or into the ground to recharge aquifers.It is necessary to ensure that the assimilation capacity of the receiving water body is not exceeded, i.e. that the receiving body can accept the quantity of nutrients without being over-loaded. Parameters such as turbidity, temperature, suspended solids, BOD, nitrogen and phosphorus (among others) should be carefully controlled and monitored before releasing any water into a natural body. The use of

the water body, whether it is used for industry, recreation, spawning habitat, etc., will influence the quality and quantity of treated waste water that can be introduced without deleterious effects.

Relevant options