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EXPERIENCE

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Arborloo Eco-Sanitation Technology: Vehicules for Better Health, Food Security and Protection of the Environment



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Summary

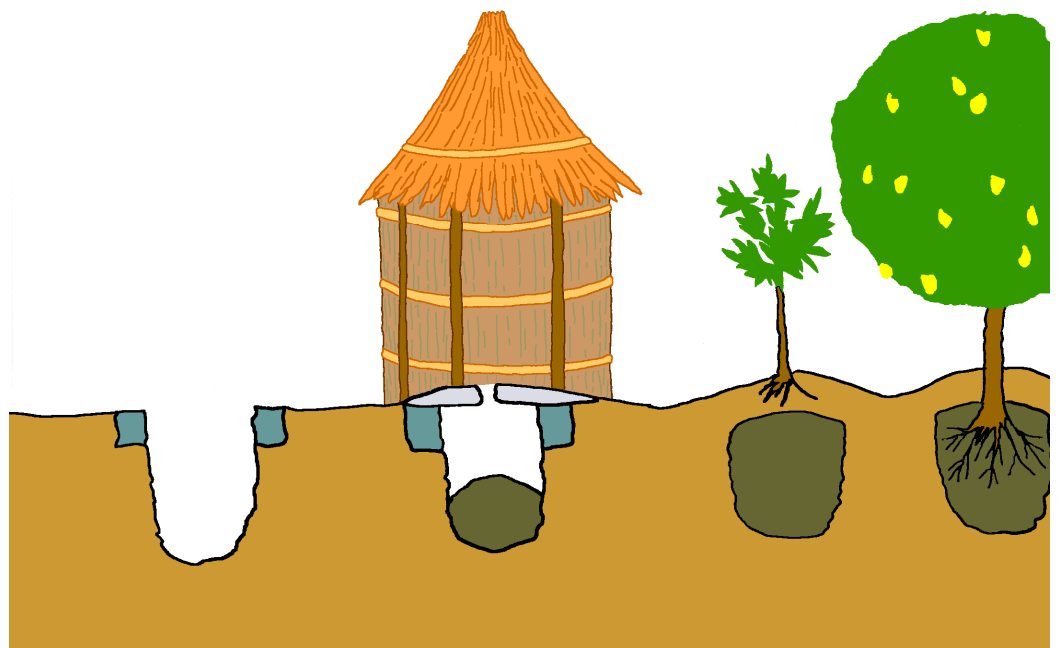
Arborloo Latrines bring improved sanitation at low cost to the poorest populations... This technology also produces organic fertiliser, at no cost, and is respectful of the environment. There are so many opportunities for new plantations...

Objectives :

Most people in Malawi have no access to improved latrines, do not use organic fertiliser and do not have the means to buy them. Arborloo Eco-Sanitation Technology gives them this access, at the lowest possible cost, and allows cultivation of vegetables and fruits by generating organic fertiliser converted from human excreta. The main objectives of the Arborloo technology are: To contribute, in a meaningful way, to better health for the beneficiaries and to increase their revenue while respecting their environment.

Methodology :

Arborloo technology, which recycles human waste efficiently, is cost effective, widely accessible and environmentally sound.



Schema 1: From left to right, the development the Arborloo latrine. [1] Shallow pit with supports, [2] Pit covered with dome slab and shelter for privacy, [3] Fruit tree seedling planted over the full pit, [4] Growing fruit tree benefiting from organic fertiliser.

The Arborloo latrine is an ecological sanitation technology treating human excreta as a valued resource and a source of revenue. Based on the utilisation of materials available locally, this cost effective and affordable technology is within the reach of everyone, even the poorest.

A first precaution is essential with regard to the site chosen in order to avoid any risk of flooding. The depth of the pit needs to be limited to 1 to 1.5 metres which will avoid any contamination of the water table. The excreta will be utilised on-site. This ensures the absence of any pathogenic organism in the fertiliser, which can thus be used for horticultural or agricultural purposes.

An Arborloo latrine is made up of 3 distinct parts: The pit, the concrete dome slab and the shelter.

- The recommended diameter for the concrete dome slab is between 850mm and 650mm. The slab is made with mixture of cement, good quality river sand and stones (10-15mm). The mixture should be made in the following proportions: 1: 1.5: 1.5. Once the mixture is ready for use, it should be poured immediately into the mould (placed horizontally) and compressed. This is to avoid the formation of air bubbles. Hardening will require 1 to 2 days. Then the mould should be removed gently. The slab then needs to be put in a place sheltered from the sun, where it will be watered regularly over the course of 7 days, until the cement is completely fixed. It is highly recommended to plan for a security support (of bricks or stones) under the slab, where the soil runs the risk of collapsing, especially during the rainy season.
- The shelter for the Arborloo latrine, erected over the pit, gives ample privacy. It is built of locally available materials, such as wood, bamboo and straw. From the beginning, this shelter should be designed to be easily dismantled and replaced at a new latrine site.

In order to avoid odours and flies, the user should apply a layer of earth and ashes after each use. Leaves and grass can also be used moderately. This latrine can function for 4 to 6 months and until the pit is $\frac{3}{4}$ full. Once the shelter and the dome slab are removed, the pit should be covered over with earth. A young tree can then be planted and watered. (Recommended species: avocado, banana, papaya, guava, citrus, mango and Mexican apple).

Arborloo literally means Tree Toilet (from the Latin *arbor* = tree). Since each latrine can give life to a new tree... By reproducing this formula every 4 to 6 months an orchard can be born... The soil, rich in humus can also be used (6 to 12 months later) for a vegetable garden.

Sources :

“Kamenyagwaza Water Supply, Sanitation and Irrigation” Project, evaluation reports, focus groups, databases, on-the-ground quarterly and annual reports. Experiences and lessons extracted from “Ecosan Pilot Study Report, 2010 - Panji VDC, Traditional Authority Kaphuka, Dedza district.