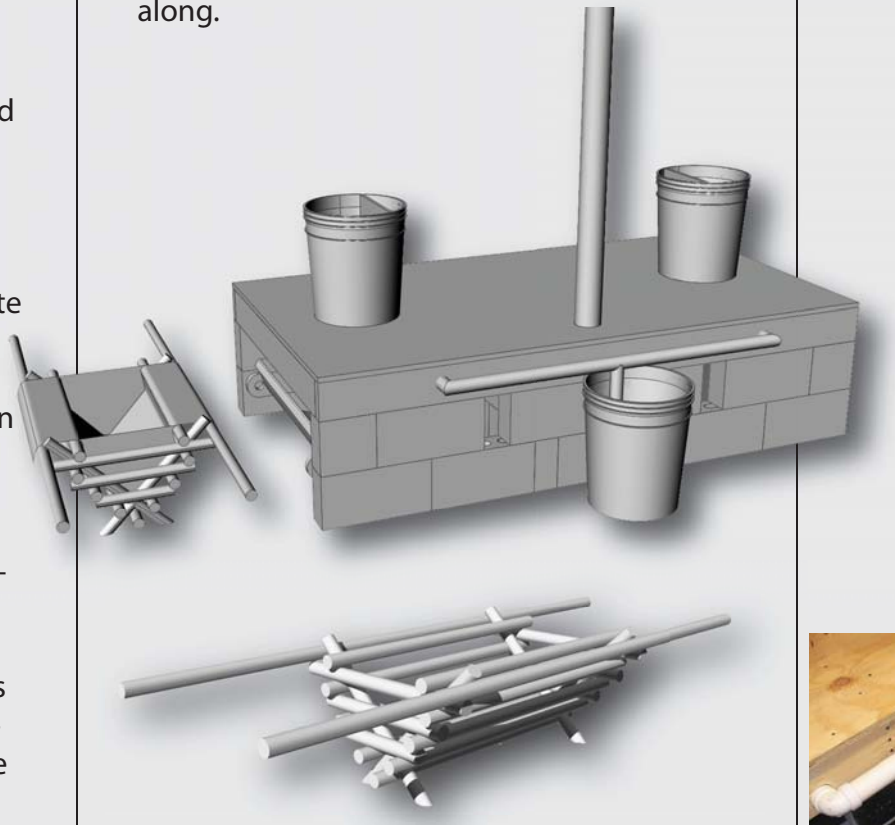
Developing Affordable Water Solutions for the World's Rural Poor

Around 3.1 million people died in 2002 as a result of diarrhea related diseases and malaria contracted from polluted water, 90% of whom were children. One of the major sources of pollution is from fecal matter that has leeched into the groundwater from improperly constructed toilets. We have decided to address this problem with a design for a composting toilet. After researching a number of possible solutions such as the continuous composting method and the chamber method, we chose the container system. Most composting toilets decompose the waste in place by having a large and expensive storage tank. In many cases it takes upwards of a year for the waste to decompose to where it is safe to handle. Our method discards the tank idea and instead has a small storage vessel that when filled can be carried to an alternate exterior composting site. The toilet is still conveniently located close to the inhabitants without having to worry about contaminating their water supply.

In many composting toilets both the solid and liquid waste is combined which creates an environment that has an excess of nitrogen which kills or at the very least limits the amount of helpful bacteria that do the composting. We have addressed this problem by creating a urine diverter that catches the liquid and diverts it to a tank. This liquid can then be diluted and used to irrigate plants.

We will be testing our design by teaching children around our community. This will help us perfect our teaching methods on the construction process that we hope to implement. We are going to gather kids who are not fluent in English, which will help us practice the language barrier we will have. We will also be developing a field manual, mainly pictures, so the villagers can follow along.



Composting Toilet

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