Public Sanitation Using Hot Composting

As Implemented in Post-Earthquake Haiti

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Waterborne Sanitation Systems

- Are Expensive
- Create Water Pollution
- Create Waste

Polluted Water is a Health Hazard

- 88% of all diarrhea cases are caused by polluted drinking water, resulting in 1.7 million deaths annually world-wide.
- WHO states that fecal pathogens may contaminate water through sewage systems, flush toilets and latrines.
- By 2015 there will be 2.7 billion people without access to basic sanitation.

Sanitation systems that do not pollute water or soil are needed.

- Composting provides an alternative.
- Composting is not based on water.
- Composting does not create waste.
- Composting recycles valuable soil nutrients.

Composting Kills Disease Germs

- Research has shown that thermophilic (hot) composting is deadly to human pathogens.
- Researchers include Gotaas, (1956 W.H.O.); Feachem, et al. (1980 World Bank). Franceys, R. et al. (1992 W.H.O.) and others.

How Do We Create Hot Composting Sanitation systems?

- There are three elements:
- 1) “Collection” toilets
- 2) Carbon-based cover materials
- 3) Compost bins

- COLLECT-COVER-COMPOST

“Collection” Toilets simply collect toilet materials before they come in contact with the environment.

A 20 liter receptacle under the toilet seat collects the toilet material, both feces and urine.

Urine separation is not required and is counter-productive to thermophilic composting systems.

The receptacle is easily removable. The contents are covered with a carbon-based material. This is a 20 liter receptacle.

This is a 60 liter receptacle. This is about the maximum size that can be easily handled without machinery.

The toilets are inexpensive to construct.

They can be located inside an existing building.

Or they can be in a separate building.

This toilet utilizes a chute through the floor.

60 liter drums collect the toilet material underneath the stalls

One drum is being filled while an empty one waits to replace it.

Hand washing stations are located at every toilet stall.

The collected material is composted nearby. It is always covered.

Sugar cane bagasse, a waste product in Haiti, is perfect for composting.

Sawdust is another waste product free for the hauling.

The toilet contents are added to a depression in the compost pile.

The new material is covered with clean bagasse. No flies, no odor.

Thermophilic conditions are consistent and prolonged.

After 6 months of aging, temperatures were still thermophilic. The US EPA requires 3 days at 131F for safety.

Food scraps are also added to the compost bins. A variety of organic materials can be recycled using this system.

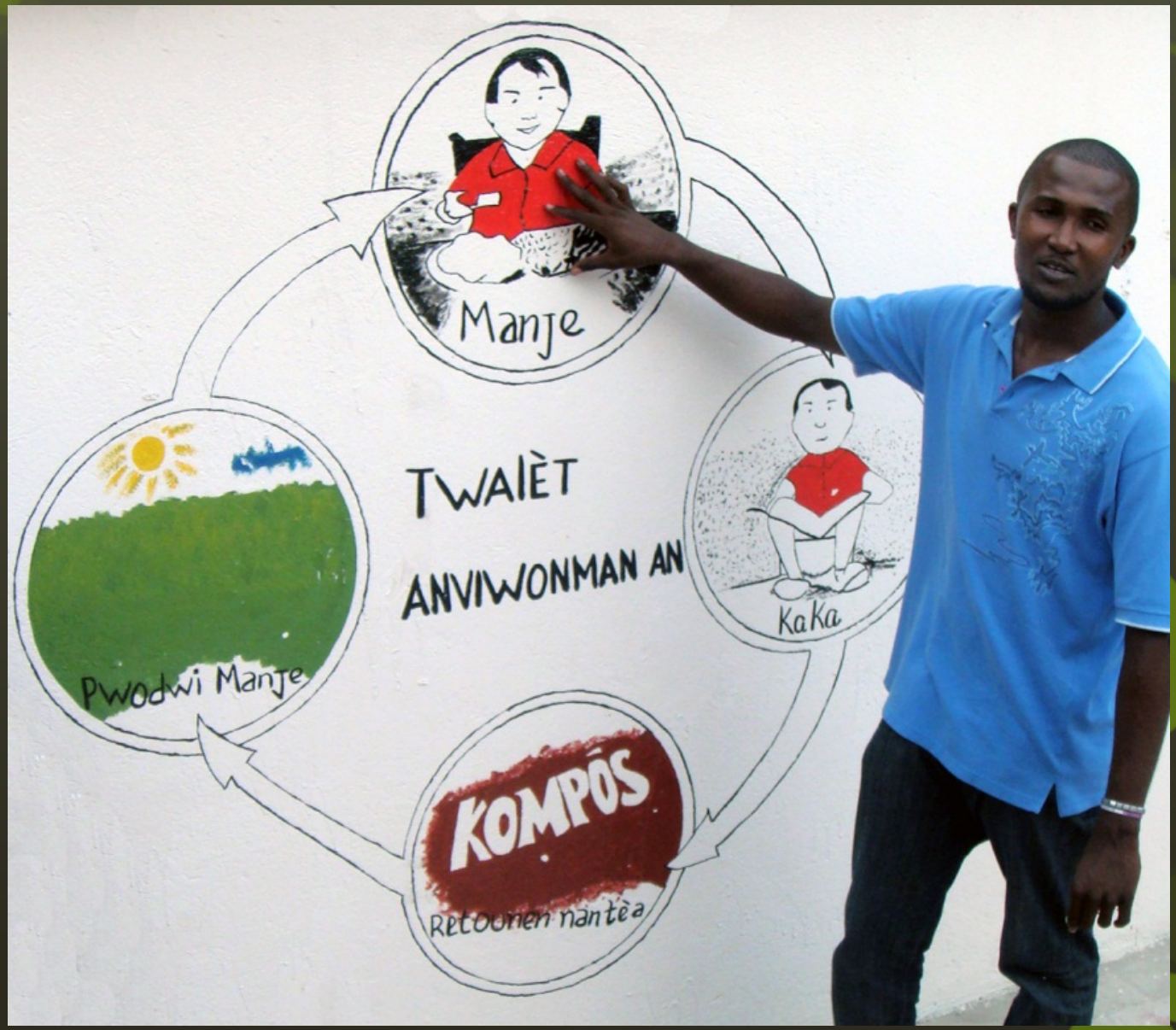
After a year of aging, the finished compost is suitable for food gardens.

Public education helps to improve acceptance of this revolutionary sanitation system.

The toilet stalls are painted with ecological messages.

Instructions are posted inside each toilet.

The toilets are ecological recycling toilets. There is no waste, no pollution, no disposal.



Questions?

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Haiti toilets were set up by GiveLove.org:

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