

A Sanitation Plan for a Fishing Village in Jamaica that Incorporates Evapotranspiration Bed Technology

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Globally 2.4 billion persons are without adequate access to improved sanitation, while 1.1 billion are without access to improved water supplies (UNICEF et al., 2000). The disparity of access to these basic services is predominately evident in peri-urban and rural communities of developing countries. Literature confirms that community-based sanitation plans that partner with the construction of appropriate sanitary conveniences and hygiene education reduces the risk to illnesses linked with poor sanitation practices. (Kalbermatten et al., 1982; Cairncross et al., 2003; UNICEF et al., 2000; Rosensweig et al., 2002).

This report documents the process used by a Fishermen's Cooperative to develop an environmentally appropriate sanitation plan within their 10 acre coastal community that will accommodate both the 62 fishermen residing at the beach and the hundreds of daily visiting bathers. In total, 17 fishermen camps have improved sanitation of which 13 are flush toilets and four are dry pit latrines.

Of the thirteen flush toilets ten connect to a holding tank, while three connect to absorption pits. Fishermen with no sanitation facility within their camp use a field adjacent to the community or use the public toilet facility, a single flush toilet that discharges to a holding tank.

The Fishermen's Cooperative employed several techniques to gather information about the beach community; including, oral survey questionnaires, community mapping techniques, historical reviews and stakeholder interviews. From this, the fishermen developed a sanitation plan that addresses the social, economical and environmental needs of the community.

To meet the socio-cultural preference for flush toilets and the economical limitations that restrict access to consistent potable water, the sanitation plan proposes the installation of two different technologies: (1) Ventilated Improved Double Pit (VIDP) dry, composting latrine and (2) Onsite wastewater disposal - x - system that employs Evapotranspiration Bed (ET) technology. The VIDP and ET technologies accommodate the environmental design restrictions apparent in the coastal community.

An ET system is a sealed, gravity-fed sand and gravel bed that treats septic tank effluent via plant transpiration and soil evaporation. The proposed area is 372 sq meters (4,000 sq feet) with a two (2) foot depth, assuming a loading rate of 3.0 mm/day (2.2 US gal/ft²). The loading rate is comparable to local and international recommendations (Bennett et al 1978; Salvato, 1992; Silvia 1990).

The plan also allocates resources for a local water and sanitation consulting agency to promote hygiene education on the beach and provide technical training for constructing the improved sanitation facilities and decommissioning irreparable facilities previously constructed within fishermen camps. This

sanitation plan acknowledges the increase in access to potable water by incorporating both onsite wastewater technology for treating liquid waste and dry sanitation technology for fisher folk without potable water access. As more developing countries improve access to potable water, an increased need for an appropriate decentralized sanitation plan that accommodates the increase in water-based sanitation facilities will be required.