

Green Toilets for Kenya

A Japanese manufacturer of sanitary ware is introducing its “Green” toilet technology to non-urban parts of Kenya.

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IN 2013 the United Nations General Assembly designated November 19 as World Toilet Day. Its goal: to raise awareness of the global need for improved sanitation and access to safe toilets. According to the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF), about 2.4 billion people – or roughly one third of the world’s population – do not use “improved sanitation,” and of these up to 1 billion defecate in the open. Every year, some 760,000 children under the age of five die from diarrheal disease contracted through contaminated food or drinking water, or from person-to-person as a result of poor hygiene. Interventions to prevent diarrhea, including safe drinking-water, use of improved sanitation and hand washing with soap can reduce disease risk.

Japanese housing equipment manufacturer LIXIL has pledged to provide improved access to sanitation and hygiene for 100 million people in the world by 2020 through the provision of innovative toilet solutions.

As part of its efforts, LIXIL is facilitating a project in Kenya to put its “Green Toilet System” into



practical use. The project commenced when the Japan International Cooperation Agency (JICA) adopted the proposal as its first Collaboration Program with the Private Sector for Disseminating Japanese Technology in 2014.

Flush toilet penetration is about 50% in Nairobi and other urban areas, while in the suburbs and rural areas where there are no sewers, conventional vault toilets are commonly used and not always appropriately managed. The installation of Green Toilets in non-urban areas will not only increase access to clean and comfortable sanitation facilities, such toilets also convert human waste to fertilizer that can be used in local agriculture.

“In Japan, human waste has been fermented,

decomposed and recycled into safe fertilizer for years,” says Yu Yamakami, who is responsible for LIXIL’s project in Kenya. “The Green Toilet System was developed by applying this traditional Japanese excrement processing technology.”

One of the advantages of LIXIL’s Green Toilet System is that it is able to separate urine and feces, which helps to reduce ammonia odor and facilitate their conversion into fertilizer.

The field tests for the project are being conducted in urban slum areas and towns in the suburbs. The aim is to develop a toilet system that suits the climate in Kenya and the lifestyles of the local people by working in cooperation with local partners.

In the project, human excrement collected in the toilet tank is transported to the compost center and converted into fertilizer. The goal is to develop a

recycling society where the excrement of the local people is returned to nature as fertilizer.

When looking for Kenyan partners for the field test, Yamakami shows samples of fertilizer made from excrement. This overcomes their understandable initial disgust, Yamakami says.

“They are surprised to see that the product of excrement processing is a clean fertilizer in a dry soil-like state,” she says. “Greatly interested, they begin to point out concerns or to suggest improvements. The Kenyan people have high expectations for the Green Toilet System.”

One slum-dweller commented, “I had negative feelings about the idea until I realized that fertilizers made from human excrement are safer than those made from unknown materials. If this project is successful, it will be a trigger for improving sanitation and hygiene in slums all over the world, as well as in Kenya.”

Field tests of the Green Toilet System are presently being conducted at the Kenya Institute of Organic Farming, where two waterless Green Toilets have been installed. In parallel, Yamakami is researching Green Toilet technologies and the financial aspects of implementation, as well as ways to make the fertilizer a high value-added product. In response to feedback from the field tests in Kenya, the development team in Japan is working on ways to improve usability and to adjust unit design so that the toilets can be easily produced by local manufacturers.

“As a toilet manufacturer, it’s important that we consider the problem of excrement disposal,” says Yamakami. “We are the first major private enterprise to enter the business of disseminating toilets in areas without sewage systems. Our creation of a market in this field will help resolve global hygiene and environmental issues.” 



- 1 Yu Yamakami and the Green Toilet System being used in the field test in Kenya
- 2 Yamakami explains the correct use of a Green Toilet.