THE HINDU BusinessLine

E-push to end open defecation

Salmanul Farisy

Self-cleaning e-toilets and she-toilets are poised to change the sanitation scenario

India dreams to be a world power; it aspires to rub shoulders with the US, the UK, France and other First World countries where access to basic infrastructure is considered a fundamental right.

But the country's infrastructure deficiency puts it on a level with many African nations. One of the major problems is large-scale open defecation which is pronounced by lack of awareness and sub-standard infrastructure, including the near absence of *pucca* toilets.

Eram Scientific Solution, in collaboration with the University of South Florida and Duke University and with financial support from the Bill & Melinda Gates Foundation, has tried to address the issue. This hopes to not not only end open defecation but also deal with the excreta by converting it into fertiliser, as well as generating power and potable water.

Shocking statistics

According to UNICEF, Indians excrete 65,000 tonnes of faeces into the environment each day. It is the country with the highest number of people defecating in the open – almost 490 million – which is a whopping 47 per cent of the population.

Owned by Saudi-based Eram Group, Eram Scientific's initial focus was on sanitation, which then turned into the development of e-toilets, she-toilets (women-friendly toilets), e-shops and so on.

"This is a 100 per cent indigenous technology developed by our R&D wing ," says Eram's Director Bincy Baby. It has a self-cleaning and water conservation mechanism.

First installed in 2011 in Kozhikode, Kerala, the e-toilets are modular, pre-fabricated public toilets made of steel and integrated with user-friendly electronic interfaces to ensure cleanliness and hygiene.

Unmanned and automated, e-toilets have remote monitoring capabilities and its health status can be tracked over the web. These incorporate full-cycle approach in sustainable sanitation by integrating electrical, mechanical and web-mobile technologies.

Other features in the e-toilet include LED indicators, overhead water tank, sensor-based electricity and water conservation mechanism, coin-validated entry and voice guidance.

To conserve water, the toilets are programmed to flush 1.5 litre of water after three minutes of usage and 4.5 litres if the usage is longer. The toilet also washes the platform by itself after every five or 10 persons.

The e-toilets use the Defence Research and Development Organisation's bio-digester technology that degrades and converts human waste into usable water and gases in an eco-friendly manner. The gas generated can be used for energy/cooking and the water for irrigation.

A Chennai Corporation study found that e-toilets turned are cheaper over a period of five years. There are no massive maintenance

charges like caretaker salary or painting.

Baby observes that though there are plenty of public toilets in India,most are not well-maintained or user friendly. Months after construction they become unusable. It's Eram's sustainability that makes it special.

The gender thrust

The company's initial thrust for e-toilets began in urban areasbut it later moved to rural areas.

But lack of funds hindered Eram's progress. Intermittent supply of electricity and water also impact its functioning. However, the e-toilets can also run on solar power and a sensor-enabled system to conserve water and electricity.

After installation, authorities tend to not be concerned with the need for maintenance support. The non-allocation of funds makes maintenance difficult. Eram charges ₹5,100 per toilet for maintenance. It also provides six months warranty for every toilet. "Compared to other options, e-toilets are cheaper to maintain," says Baby. The Thiruvananthapuram-based company has already constructed 2,000 such toilets in 19 states, including 150 in schools. It has also set up 600 sewage treatment plants. "Most people avoid using public toilets due to their conditions. This technology is gradually changing the country's public sanitation scenario," believes the director.

Despite the small challenges, the response from people has been good. "The administrations of different states have co-operated with us and the growing number of users has been a positive experience,"she adds.

The company is now focusing on rural schools where children, especially girls, suffer most due to open defecation. Eram wants to educate children about the ills of open defecation right from their childhood to put an end to the problem.

(This article was published on October 11, 2016)

MORE FROM BUSINESS LINE

Soon, a Made-in-India aircraft will be ferrying passengers

NRI deposits plunge 55% on oil slump, Fed rate-hike prospects

Qualcomm India President Sunil Lalvani quits