

BITS-Goa develops solution for onsite waste mgmt for toilets

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Panaji: The transport of human waste to sewage treatment plants (STPs) involves cost and time and often leads to dumping of the waste at undesignated sites, resulting in pollution. Now, a team at BITS-Pilani's Goa campus has developed a solution in which waste is treated at site.

At the popular Bogmalo beach in Mormugao, the institute has installed these toilets with the treatment system, at a cost of around Rs 22 lakh. The installations are funded by the Union government's department of biotechnology and the Bill and Melinda Gates Foundation.

"If the treatment plant is not located nearby, there are certain complications that can arise due to transportation of waste to a far-off treatment facility, either through sewers or vacuum trucks or manually. There are chances of waste getting dumped off somewhere else, which if left unattended, can be unhygienic and create maladies in humans," said Srikanth Mutnuri, professor, water sanitation and hygiene laboratory, de-



These toilets have been installed at the Bogmalo beach in Mormugao

partment of biological sciences, BITS-Pilani Goa.

His team has demonstrated how their on-site treatment technology works for a single household, for a 100-people facility, like a student hostel, and now for a public toilet for Bogmalo. The toilet and the treatment system installed at Bogmalo was opened for use last month by panchayat minister Mauvin Godinho and members of local panchayats.

This decentralised treatment system with 'vertical flow constructed wetland and electrochemical disinfection system' is a collaborative project with professor Korneel Rabaey at Ghent University, Belgium.

"The toilet wastewater col-

lected in the septic tank will pass through a partial vertical flow constructed wetland, followed by an electrochemical technology, which disinfects. The tank effluent then sequentially goes through high and neutralising pH regimes. It is shown that both bacteria and helminth eggs can be killed with this approach, fulfilling discharge requirements. The technology aims at maximal simplicity through minimal mechanical processes," Mutnuri said.

The effluent coming out of this treatment system will be suitable for further processing or will be safer in case it does not go through any STP treatment. The system requires minimal maintenance, said Mutnuri.