

# SafeSan: Safe Sanitation System



**Problem Statement:** In India, more than 50% of the population lacks household toilets. Nearly 70% of the total sewage generated goes untreated. Under Swachh Bharat Abhiyaan, rural sanitisation (access to toilets) and urban wastewater management are the problems that need to be addressed. SafeSan is a decentralised sewage treatment unit that addresses this problem area.

**Uniqueness of the Solution:** SafeSan is an innovative decentralised sewage treatment unit. It provides the toilet with complete faecal treatment. Treated water can be reused for flushing or other non-potable uses such as irrigation or watering gardens. The system has lower cost, better disinfection capacity, low land requirement and is more efficient than conventional septic tanks. It also has a Longer Cleaning Frequency. The treatment unit has an organic removal efficiency of 85% and solid removal efficiency of 85%. In package form, it can be a prefabricated isolated toilet unit in

individual households or as a toilet block at a community level. It can also be used as a toilet solution for public convenience at public parks and public places such as bus stops, railway stations, or highways.

**Current Status of Technology:** The SafeSan system has gone through various stages of testing and has been successfully implemented. It stands at TRL-9. A unit was installed at a residential bungalow (not connected to sewerage systems) at Alibaug, near Mumbai, in 2015, and 50 stand-alone units were installed at Kaulkhed Gomase Village Akola District, Maharashtra, in 2020.

**Societal Impact:** SafeSan can provide safe sanitation/ toilets for everyone in residential and commercial establishments as a basic requirement. It is also in line with the objectives of Swachh Bharat Abhiyaan. It can provide clean and safe access to toilets in public places, rural areas, slums, and construction sites.

**Patent(s):** Nil

**Relevant Industries:** Urban Local Bodies, Rural Panchayats, Bus Stops, Railway Stations, Highways.

**Faculty:** Prof. Anil Kumar Dikshit, Environmental Science & Engineering.