

SANITATION SYSTEMS FOR A HEALTHY WORLD, EKAM ECO SOLUTIONS

- **Background**

Around 60 per cent of India, the world's second most populous nation, does not have access to safe and private toilets. Stinking public urinals, where toilets do exist, are what you will commonly find. Around 45% of Indians pee & poop in the open. About 70% of human waste water in cities remain untreated and is discharged into the rivers. All most everyone is scared to use public restrooms. Human scavenging is among the most inhuman and demeaning practices in modern India. Major metros like Bengaluru and New Delhi face severe water shortage.

Working on improving people's toilet access and experience, Mr. Banerjee, the founder of Ekam Eco Solutions, in partnership with his IIT professor V.M. Chariar, has designed a urinal which, instead of consuming water, prevents it being wasted and - amazingly - remains stink-free due to a membrane and a liquid seal that act as sealants against odour.

- **Location, Date**

75 cities in India, 2013

- **Areas**

Urban

- **Stage/Scale**

Pilot, expanding to full scale business

- **Objective of the assignment**

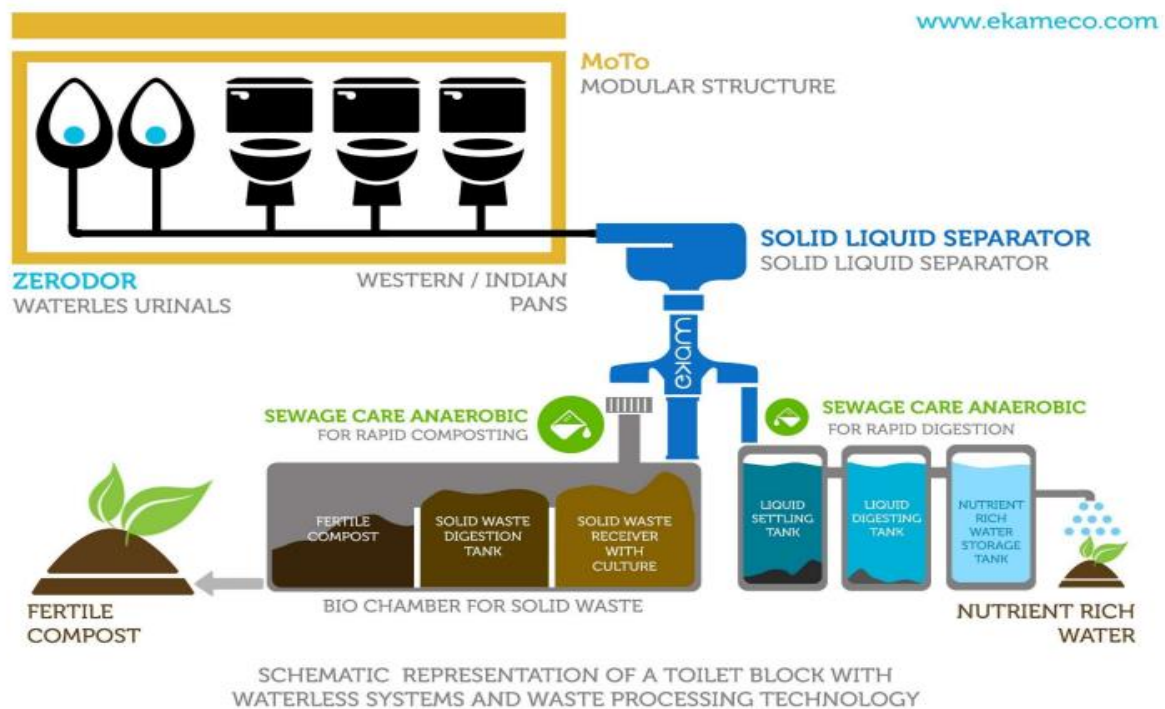
- Ekam Eco Solutions work on conventional sanitation systems but on an *“ecological and sustainable system a system which is eco-friendly, non-polluting, sustainable and saves water.”*
- At Ekam Eco Solutions, people aspire to be the change and bring the change that Gandhi wanted to make in our attitude towards Sanitation. Ekam Eco Solutions is in the business of creating Humane, Hygienic & Sustainable Sanitation Products that Mimic Nature.

- **What was done**

Zerodor Urinal Traps and Waterless Program: Zerodor is a patented technology, the rights of which rest with IIT-D. Ekam Eco Solutions holds the rights to disseminate this technology nationally and internationally. It is a mechanical system with a valve, which allows the urine to go through and blocks the ammonia present in the urine in the urinal pipe. It can be retrofitted in existing urinals and is available in three different materials. The water flush is uninstalled once the system is installed. No chemicals are used, and no electricity is required, making the kit low maintenance. All that needs to be done is to wash the urinal with running water once a day to keep it clean. *“We don't recommend the number of*

times a urinal should be cleaned in a day. Clients know the frequency of use of a particular urinal and must decide accordingly,” says the team.

With waterless urinals, one can save anywhere between 50,000-1,51,000 litres of water per urinal each year. Zerodor costs between INR 2,500-4,500, depending on the material used and accompaniments such as pipes, and connectors. “Installing one such urinal will recover the cost in a month or so with the savings you will make by using no water and associated costs like power, plumbing and maintenance. And we can guarantee the life of one system for three years,” adds the founder.



In a typical sanitation value chain like above, the utility of Sewage Care is apparent. It helps in rapid composting of solid waste into a fertility boosting organic by-product. The most crucial aspect is that it helps in closing the Agriculture-Sanitation-Agriculture loop. Waste water is broken down to nutrient rich water and a fertile compost.



The images above show the actual product Zerodor.

• Impact

Zerodor has already completed 7,000 installations – 5,000 of them since October 2014 when the Swachh Bharat Mission was launched with the aim of achieving a "Clean India" by 2019, Mahatma Gandhi's 150th birth anniversary year. The following information reveals the impact that Zerodor has created:

- 200+ clients
- 10000+ installations
- 500 million litres of water saved
- 10 credible awards won

• Challenges and Issues

A major impediment during the initial stage was convincing people about Zerodor. *"People are not easily convinced if it is a simple technology. Make it complex and they will jump on it,"* says Mr. Banerjee, the founder of Ekam Eco Solutions. Also, for many, it is not about conserving water but more about odour control. *"One of the reasons to brand it as Zerodor not 'zero water' was to deal with the concern around odour,"* he says.

• Innovation

The IIT incubated Ekam Eco Solutions does not change the existing urinal pots but modifies and provides retrofits to benefit the waterless urinal system. No consumable or cartridge or chemicals are needed as is seen in other waterless urinals. The water supply to the pots are also disconnected. The Zerodor Waterless Urinal Technology functions based on the principle of a ball valve used widely in process engineering dealing with gases and fluids. The design utilizes differences in specific gravity of urine and the hollow LDPE ball valve used in the trap.

• Lessons learnt

This mechanism, a polymeric wall which can be retro-fitted into existing ceramic urinals, can save between 50,000 and 1,51,000 litres of water per annum per urinal, a huge plus in a nation in dire need of conserving water. Ekam Eco Solutions has tried to take help from technology to deliver sanitation solution very economically.

• Financials

More than 200 organizations have adopted Zerodor, making it easier for Ekam Eco Solutions to grow. It has received a paid-up capital of INR 500,000 in the beginning.

• Economic sustainability/Revenue Model

Each unit of Zerodor is priced around INR 5,500. Companies like Dell, Aditya Birla Group, Vedanta, Reliance Industries Ltd., Indian Oil etc. are the customers of Ekam Eco Solutions and the list is growing day by day.

• Implementer Contact Persons

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• Sources and References

- <http://ekameco.com/>
- <http://www.theweekendleader.com/Innovation/2351/water-saver.html>
- <http://www.livemint.com/Leisure/Frt8By06AmqUNN1zodiZ60/Ekam-Eco-Solutions-Water-not-required.html>
- <https://blog.ekameco.com/better-sanitation-for-more-people-ec33c74efa96>
- <https://www.zaubacorp.com/company/EKAM-ECO-SOLUTIONS-PRIVATE-LIMITED/U90000DL2013PTC252957>
- <https://www.cleanindiajournal.com/waterless-urinals/>