

Composting toilets – the future of sanitation?

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Ask any water supply board engineer and he will tell you that the bigger headache is sewage management and not water supply. Statistics will also show that almost all of India has access to water supply –of varying quantity and quality no doubt- but far too few have access to good sanitation.

The Millennium Development Goal adopted by the UN in September 2000 and of which India is a signatory seeks to halve the number of people without access to sanitation by 2015. That means India will have to build at least half of 115 million toilets to cover half of 78% of our rural population and 24% of its urban population un-served sanitation units by the year. A huge task indeed.

Typical sanitation solutions have included the septic tank or simply a pit latrine. Both tend to pollute ground water and are environmentally unsatisfactory. Even in water resource rich area like Goa or Kerala inadequate sanitation has ended up contaminating ground water to such an extent that many wells are unusable. Sanitation and water supply are inextricably linked. If it is not ‘fouling the nest’ it is the unavailability of water which has made many toilets unusable in rural area. If you do not have water to drink will you use it for a toilet?

On the other hand area wide underground sewerage systems with treatment facilities are difficult to provide and are costly ventures. They tend to be energy consuming and generally do not work satisfactorily. For scattered houses in outlying areas of cities, in villages, in places with a high water table and in hard rock area technically appropriate solutions are either not available or are costly to implement.

In such a scenario one emerging solution is a dry composting toilet.

A composting toilet collects human waste and converts it to a fertilizer resource for plant growth without polluting water bodies or groundwater.

One such urine separating composting toilet system looks like this



An Eco-san separating pan

Tin drum for faeces and barrel for urine collection

The front portion of the pan is for the urine and the rear part with a cover is for the faeces, much like the plumbing system in human beings. After using the toilet the faeces is covered with sawdust. If toilet papers are used they are also put in the portion where the faeces go, alternately wash water can also go there. The important point is to cover the used portion completely with sawdust. The toilet is surprisingly a no smell toilet and there are no other problems of flies, gnats or insects.

The urine is collected in a plastic barrel and after dilution with water in proportions of 1 to 3 or 1 to 8 can be used for plants, especially trees, where it makes a good fertilizer with its high nitrogen content.

The faeces is collected in a tin box and once the tin box is full it is replaced with another. The full box is allowed to compost for 3 weeks and then transferred for further composting to either a large composting drum or to an earthen pit. When covered with leaves the material composts very well in about 3 to 6 months and can be used as a soil nutrient.



Waste composting in two tin drums ‘Tippy tap’ for washing with minimum water below the rain water collection drum

For washing purpose a ‘tippy tap’ – a product developed by the Centre for Applied Rural Technology, Mysore- can be used with which the wash job can be done along with hand cleaning with as less as 80 ml of water. The ‘tippy tap’ can be placed in the toilet for washing along with a saw dust container for covering the faeces.

This ecological method of sanitation consumes less than a litre of water per day for a family, converts human waste to a fertilizer resource, is clean, hygienic and functional and can be constructed almost anywhere irrespective of high water tables, hard rock below the ground or any other conditions which prevent the construction of regular toilets. By harvesting water from the rooftop of the toilet into a simple 200 litre drum all the water requirement of washing in the toilet can be met by the toilet roof itself.



Rooftop rain collected in a 200 litre drum for use in Eco-san

The urine separating WC's are available not only in the Indian type but also in the European type. These toilets are being used in individual houses as well as flats.

Eco-san alternatives are coming up in many places in the world including Sweden, Germany, Denmark, the USA, China and Sri Lanka to name a few. India too has its Eco-san heroes in Dr Bindeshwar Pathak of the Sulabh movement and Paul Calvert in Trivandrum, Kerala.

For more information log on to www.rainwaterclub.org or call 080-23641690.