Suggestions on Building low cost sanitary toilets.

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In India in many urban as well as rural areas drinking water is still a major challenge, in these circumstances having people to use conventional water based toilets is not possible. In these conditions people are forced to build house without toilet, they prefer to defecate and urinate in open areas. However this practice open up bigger health risks to these citizens and also it spoils the environment. Help from Government health department machinery is needed to educate people on need to have toilets in their home, there is need to look at option of waterless toilets in areas where even getting drinking water is a challenge.

One of solution to above problem is to look at option of having Solar dehydrating toilet.

Solar Dehydrating waterless toilet -
In a self contained, exterior installation, a waterless toilet will almost certainly be less expensive to install if we consider the cost of bringing water to site and hooking up to the waste water network. In an internal, mixed environment, (e.g., where water is available and used for sinks), waterless toilets can greatly simplify the treatment of the waste water. In all cases, due to the fact that waste is treated on site, a waterless toilet will typically impose less strain on environmental resources.
Solar Dehydrating Toilet explained

1. The Dehydrating toilets use sunlight and wind to dry human waste. Once dried, the waste becomes a safe, neutral, odourless material which can be handled with the minimum of fuss. Just as nature recycles garden refuse into compost, evaporating, dehydrating toilets provide the right environment for human waste, toilet paper and organic material to break down through a natural process into an inoffensive compost-like material.

2. Human waste is made up of mostly water. Although the average human produces about half a tonne of waste per year, the solid matter is only about 25kg. (Volumes vary enormously depending on diet and liquid intake etc).

3. The Dehydrating toilet deals with human waste by simply removing the water.

4. The dried waste is removed from the toilet in a basket, having spent roughly two years in the system drying out. The inert and odourless dry waste is transferred in the baskets, using the precaution of gloves, into a secondary composting process to allow the waste to be composted fully. This generally takes the form of a compost bin dedicated to the waste. This bin will, over time, produce compost which should only be used on non-edible vegetation. However, the reality is, that the compost bin will fill up very slowly and therefore will not need emptying for a considerable time.
Solar Dehydrating toilet architecture

A light breeze is enough to turn the extractor, dragging air out of the chimney.

The unit heats up in the sun, air inside rises and the air flow accelerates.

The forced air flow:
- reduces waste volume, (water), by up to 90%
- kills pathogenic and promotes aerobic bacteria
- requires no additions such as straw or sawdust
- works to eliminate odours

Fresh air enters via the toilet bowl - thus eliminating odours.

Air is streamed over the separated waste, dehydrating solids and evaporating liquids.
Implementation of the policy

- While the solution of water less toilet is available, challenge comes in implementing it across country and getting people to use the system.

- For effective implementation of the solution government should make it mandatory for citizens to have toilet in their home to be eligible for any government facilities, Each AADHAR number should also have detail of whether citizen has toilet in his/her house. There is urgent need to pass legislation to make urinating and defecating in open a punishable offense.

- The cost of deploying toilet system can be taken care through providing tax incentives to sanitary ware companies manufacturing these systems and promoting locally manufacturing of the system. If we are able to achieve the toilet installation in INR 25000 we can make it affordable for people to install the setup.

- For effective management of the system it is advisable to have one system per house, In case of cities like Mumbai where we have seen concept of common toilet, managing the toilet system will be huge challenge due to very heavy usage. In case of shared toilets we would still need to have traditional water based toilet system.

- The proposed system can also be easily installed in rural areas due to availability of space, sunlight and wind. In Urban areas this system can be used where each house has space available to install the system.

- The success of this initiative will depend on political will to enforce people to start using toilets and stop the practice of defecating in open area.
Jai Hind