

**39<sup>th</sup> WEDC International Conference, Kumasi, Ghana, 2016**

**ENSURING AVAILABILITY AND SUSTAINABLE MANAGEMENT  
OF WATER AND SANITATION FOR ALL**

**Customising the toilet designs: a key growth factor  
under sanitation programme**

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**BRIEFING PAPER 2392**

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*“Sanitation for all” remains a challenge. In India, the national policies and programmes focussed on elimination of open defecation practice but the progress has been painfully slow. While there are positive results in terms of awareness on household sanitation and the desire to access improved systems, experiences of programme implementation show that the limited options of toilet design including the people’s perception on available technologies prove barriers towards universal access. There has been an increasing focus to influence the household’s behaviour towards sanitation but to make the toilets a convenient experience more to be done. The changing profile of the target populations, the paper argues demand not just the basic functionalities but durable structures, cost-effective technologies and appealing features. Innovations in toilet designs along with effective ways excreta disposal can offer sustainable solutions.*

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**Introduction**

The number of households without latrine facilities at home declined in India by 10.5% between 2001 and 2011. This has been rated as very slow progress particularly when the government aimed to achieve the target by 2012. The unsatisfactory growth was explained variously and the much quoted reason identified strong rooted cultural practice of relieving in the open by the rural population, poor quality constructions of the toilets, lack of interest among the officials and the local representatives involved the programme implementation and so on. Indian sanitation programmes aiming to achieve universal coverage received comments as people “continue to defecate in the open despite having a household toilet, frustrating government hopes to ween more than 600 million of its citizen off the practice”. Since most of reported open defecation are from the rural areas and the decline of 8.8% in the past decade in the rural areas compares slightly higher 7.7% for the urban areas give needed strength notwithstanding with the comments “figures from the Ministry of Drinking Water and Sanitation show that since 1986, India has spent over \$3 billion on constructing toilets across the country, but positive results are still not visible”. However there are reasons for concern because “the NSS 2012 revealed 43.4% of households at all India level had no latrine facilities. The NSS 2012 shows that 59.4% and 8.8% households in rural India and urban India respectively had no access to sanitation. Towards achieving the target of access to basic sanitation facility in households, in urban areas, the 2015 target is likely to be met as the percentage of households without sanitation facility is likely to be 10.74% in 2015 against the target of 14.18%, and the progress is quite lagging behind in rural areas as likely achievement in 2015 is 60.96% of households without sanitation facility vis-a- vis the target of 46.77%. At all India level, 2015 target is unlikely to be met the percentage of households without sanitation facility is likely to be 47.31% vis –a –vis the target of 38.09%”(MGD Report 2015). At the same time awareness on sanitation needs has raised the aspirations to own a personal toilet and the available data from Ministry of Drinking Water and Sanitation suggest the profile of the participating communities have significantly changed and a significant proportion being “not-so-poor”. These are the segments where demand for household toilets exists and hence promotion of alternative toilet designs can make greater impacts.

## Assumptions

The number of households with water closets latrines increased by 18.4% and those with pit latrine decreased by 2.1% during 2001-11. This brings a new insight into technology adaptation and understanding perceptions of the targeted groups.

Three trends are evident from the table above; firstly that people are receptive to change and willing to accept improved household latrines represented here by water closet latrines. Secondly, since water closet latrines are considered technically advanced over the pit latrines hence there are overwhelming acceptance both in the rural and urban areas. Also, the pit latrines showing a negative growth imply the technology when appears less savvy and unpalatable are disgusting and people do not like to make investments. Third, overall demand is influenced by the urban households and setting a trend for the rural. This explains aspirations of the rural people to follow the urban ways at least in the use of household latrines.

	Household having Water Closet Latrine			Household having Pit Latrine		
	2011	2001	Change	2011	2001	Change
Rural	19.4	7.1	12.3	10.5	10.3	0.2
Urban	72.6	46.1	26.5	7.1	14.6	-7.5
Total	36.4	18.0	18.4	9.4	11.5	-2.1

Source: Census of India 2011

## Methodology

The national guidelines on household toilet constructions mention the government's policy on toilet designs and also suggest the promotional tools to make the sanitary technologies accessible to the household. The implementation challenges, particularly those faced in expansion of programme areas, highlight the gaps in the polies and programmes and hence provide valuable lessons. This makes an interesting basis for analysis.

Census of India reports and online reports of Ministry of Drinking Water and Sanitation, Government of India have been the primary sources of information.. Analysis of these reports, related documents and the letters provide information on policies, programmes and trends in household toilet constructions.

Website of Ministry of Urban Development, Government of India have been another source of information on schemes and the programmes launched to meet the challenges of urban sanitation.

Above information have been supplemented by reports appearing in media, as well. Finally the discussion with the community member on various occasions in the different part of the country have been the most valuable source of information.

## Main findings and comments

### 1. Question of adding convenience by toilet use

People who defecate in the open find it is "pleasurable, comfortable or convenient", a recent research in four Indian States indicates. "Of individuals who defecate in the open despite having access to a latrine in their household, fully 74% cite these same reasons" implies that a high majority of the people who own a toilet have reasons for not using the existing facilities. The study further shows "14% of individuals who defecate in the open mention that they prefer going in the open because there are problems with using a latrine". This highlights there are problems in toilet use and hence a greater understanding of the challenges in sustained use can be a step towards addressing the issues. On the other hand, the personal toilets add to the convenience was reported in "a comprehensive baseline survey on knowledge, attitudes and practices in rural water supply and sanitation conducted during 1996-97 under the aegis of the Indian Institute of Mass Communication, which showed that 55% of those with private latrines were self-motivated. While 54% claimed to have gone in for sanitary latrines due to convenience and privacy".

However the successive governmental efforts to eliminate the practice of open defecation and to motivate families to own the personal toilets have focussed on promotional measures such as the financial incentives to the families and providing the low-cost toilet options. These are aimed to influence the behavioural aspects only. The national programmes for the rural sanitation with a pan-India presence spreading over to 600 districts has already reached to a peak during period 2006-11. Though a segment of market have benefitted but the larger part have not been impacted. Out of 181 million rural households 112 million have been reported with toilets during 2001-2016, but already identified 9.2 million with dysfunctional toilets raise the questions that what has been offered do not meet the expectations of the users.

<b>Table 2. Average Annual Toilet Coverage (Million) in the Rural Areas</b>			
<b>Year</b>	<b>2001-06</b>	<b>2006-11</b>	<b>2011-16</b>
Number of Individual Household Toilet Construction	0.4	11.4	6.,1

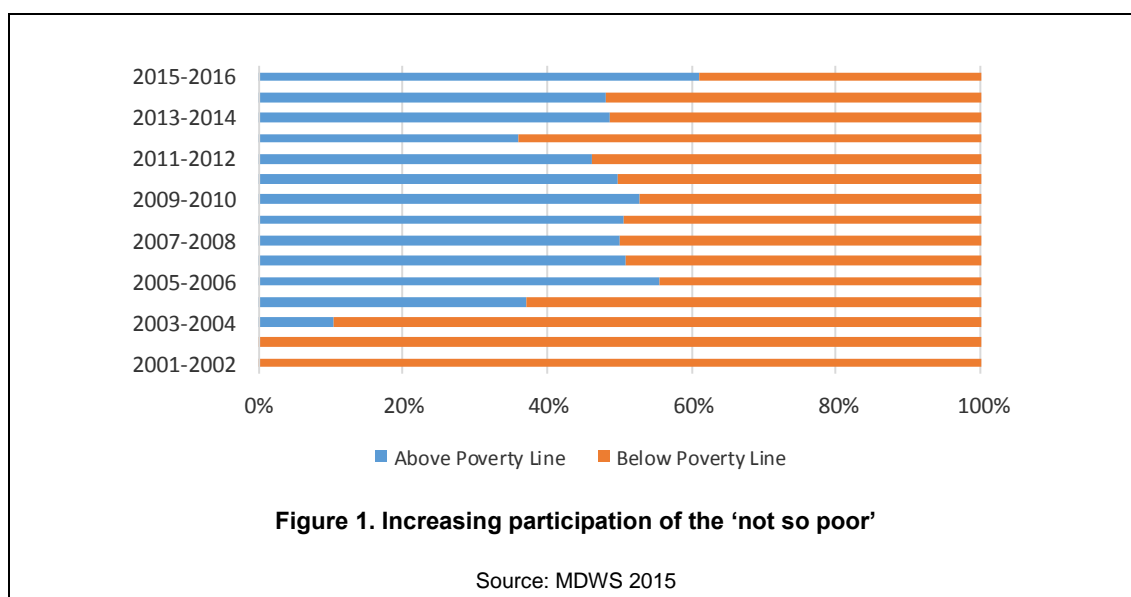
Source: MDWS 2015

Unlike the rural areas, the urban pockets with open defecation are not seen behavioral challenge rather more of people lacking facilities. Hence attention concentrated on developing public convenience barring schemes such as Integrated Low Cost Sanitation which aimed to convert dry latrines into low cost pour flush latrines, and until Swachh Bharat Mission filled the gap in 2014. Earlier on achieving open defecation free cities the National Urban Sanitation Policy (2012) emphasized on “adequate availability and 100 % upkeep and management of Public Sanitation facilities in all Urban Areas, to rid them of open defecation and environmental hazards”; In the case of urban areas adequate availability and upkeep of public toilets have been in question which are far from being pleasurable experience.

## 2. Services for the varied group of users

A clear policy to encourage the poorer households to build and use personal toilet began under Central Rural Sanitation Programme (CRSP) in 1986. “Low-cost-toilet option” was considered under the programme which continued in the restructured Total Sanitation Campaign launched in 1999. Though new phase emphasized on “demand based approach”, the priority remained on “design of improved leach pit as research and development initiative” to meet a needs of the rural households. As a result, the no in-between the improve leach pit latrine (cost \$200) and septic tank toilets (cost \$1000) options could promoted effectively promoted for “not-so-poor” consumers

Financial incentive provides a basis to expand the coverage including those with special needs but also demands appropriate technical options and services at the local levels.



<b>Small and marginal farmers</b>	<b>Landless labourers with homestead</b>	<b>Physical handicaps</b>	<b>Women headed households</b>
4.15	1.19	0.05	0.33

### 3. Expanding demand with alternative designs

Cost-effectiveness is the key consideration by the people while selecting the options for the personal toilets.. Though the leach pit technology became available at lower cost, and proved efficient in terms of water usage, making inroads to the larger markets proved difficult. At the other level, the demand for septic tank toilets still dominant has been only other choice. For a section of market leach pit toilets are the “kachha”(non-concrete-structure) and hence less durable. People are hesitant to buy the solution which find imperfect. Many of these people having a better affordability prefer to go for traditional technologies such as septic tank and or wait for sewer line system. Leach pit continues exist with a tag as “poor-man’s toilet”, the technology has induced demand in the urban pockets as well.

<b>Type of technology</b>	<b>Rural</b>	<b>Urban</b>
Piped Sewer System	2.2	32.7
Septic Tank	14.7	38.2
Flush to other System	2.5	1.7
With Slab/ ventilated improved pit	8.2	6.4
Unimproved	3.0	2.4
Public Facility	1.9	6.0
<b>Total</b>	<b>32.7</b>	<b>87.4</b>
Open to field/ bushes	67.3	12.6
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Census of India 2011

Toilets connected to septic tanks is the clear preference by the households in the both in the rural and urban areas. However, in a recent post Robert Chamber identifies “not wanting pits or septic tanks to fill because then they have to be emptied” as a reason for open defecation or not regular use of the constructed toilets. “Cost and durability were the two most important factors related to a technology, indicating areas where more research could be done on balancing cost-effectiveness of materials and supply-chain systems that support long-lasting hardware and long-term behaviour practice”.

### 4. Products to fit with local values

The research finding also points to the “ideas of purity and pollution” restrict the construction of toilet pit near the living space. This means households with smaller dwelling size, both in the urban and rural setting, would find difficulties in constructing toilets within the premises. The practice of ablution and bathing are important rituals hence demand secure sources of water. Such groups are not necessarily averse to toilet use.

The figure below show a positive correlation between households with toilets and households with piped water connections for some of Indian States.

Attracting personal investments in toilets, a multi-dimension question. Most of the families in village Itkheddi own their personal toilets. The village headman expresses his satisfaction over the progress “except for nearly twenty to thirty out of hundred odd families all have completed the constructions” and the entire village will have full coverage in the next few months. This is a no big surprise under the push given to the rural sanitation but what is the bigger difference a personal toilet has be a “pucca” (durable and perfect) structure. The village located in the central India here preference goes to much bigger facilities which usually have large underground concrete chambers, larger superstructure and handwashing facility outside There are few takers of improved leach-pit toilets, promoted as the low-cost sanitation model for the rural households, which the village already has experienced nearly ten years back. The defunct structures of the previous phase can be seen around as the people complain the toilet pits have been either filled or burrowed by the rats. Clearly the village now has moved into next ladder of sanitation.

However, the people **find themselves ready to making investments in their personal toilets** are not easy decision unless if they have managed enough resources, at least five times higher (\$1000) than the standard twin-leach pot model. Though raw materials to trigger construction can be availed from one of the corporate houses which sells tractors in the nearby town and post-construction incentive from the government are important motivators, a substantial part of investments are from the personal funding. The practice of open defecation has been contained partly due to cultivated lands around the village as the people find difficult to move into the fields as they may face objections from the owners. Every household in the village have their private bore wells which meet their domestic water supplies requirements and hence use of toilet at home is much more convenient.

### **Conclusion and lesson learnt**

India’s sanitation problem has been explained essentially a “behaviour” issue when the people in general have preferences for open defecation. Over one and half decades (2001-2016) of rural sanitation programmes experienced different approaches while aiming at influence the sanitation behaviors with the measures such as post-construction financial support to the benefitting families and awareness programmes on latrine use. During the period the guidelines on toilet design changed to include basic low cost units without super structure (2004) to basic low cost unit with super structure (2010). Though this change gave space to emerge different designs single leach pit toilets, double leach pit toilets and more recently double leach pit toilet with provision for water tank and handwashing facility, however these design could attract only a segment of the target population. However a large number of end users experienced problems in toilet use that resulted into a numbers of dysfunctional toilets.

Secondly, evidences from communities indicate that a desire for a clean, durable and convenient product exists. In the rural areas converting desire for personal toilet into demand requires has been a challenge despite stimulants such as providing incentives and low-cost toilet models. But not much has been done to improve the product design and as we have seen a septic tank toilet is considered as matter of pride. In the urban areas where target population depend upon public facility which are inadequate and inconvenient.

The case study demonstrates the households investments can be mobilized in construction of the personal toilets though incentive by the government, triggering by the corporates under their social responsibilities and proactive local self-government still important.

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### **Acknowledgements**

The author would like to extend thanks to Ministry of Drinking Water and Sanitation, Census of India and Ministry of Statistics and Programme Implementation, Government of India for data and information that helped to analyse the contents and present this paper to the interested group of people.

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**Note/s**

Improved leach pit latrine is an on-site disposal technology. The design includes leach pit and water closet, hence considered as improved latrine. It has been promoted as low-cost-option for rural households and letter listed as Priority7 of Ministry of Drinking Water and Sanitation by a letter dated 12/05/2007.

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