EcoSan: Sustainable solution to sanitation problem in rural India
Outline of the presentation

- Context, Extent of the problem and challenge
- Ecosan intervention in Korba, Chhattisgarh
- Strategy adopted
- Key outcomes of the intervention
- Conclusion
Context

81% of 1.1 billion people that defecate in the open in the world live in 10 countries:

- India: 638
- Indonesia: 58
- China: 50
- Ethiopia: 49
- Pakistan: 48
- Nigeria: 33
- Sudan: 17
- Nepal: 15
- Brazil: 13
- Niger: 12
- Rest of the world: 215

Population with no access to sanitation in % of the total population, 2004:

- More than 50%
- From 31 to 50%
- From 5 to 30%
- Less than 5%
- Data not available

1. According to the definition of WHO and Unicef: Population having no access to a waste water or solid waste treatment infrastructure, well maintained toilets or linked to a septic tank.

Sources: World Health Organization (WHO) and Unicef, Meeting the MDG drinking water and sanitation target, 2006.
Extent of the problem

- Globally, India has the largest number of people defecating in the open: more than 595 million (nearly half of the population of India)

- Close to 65,000 tones of faeces scatter into the open environment each day

- India accounts for 90 per cent of people in South Asia and 59 per cent of the 1.1 billion people in the world who practice open defecation.

- Open Defecation is not limited to rural areas only, it is found in urban areas too. 12 per cent in urban and 65 per cent in rural.

- India reports the highest number of deaths due to diarrhoea in children under five in the world. Every year, diarrhoea kills 1,88,000 children in this age group.

- Children weakened by frequent diarrhoea episodes are more vulnerable to malnutrition, stunting and opportunistic infections such as pneumonia. About 43 per cent of children in India suffer from some degree of malnutrition.
Challenge!

- Meeting the Swachh Bharat Mission (the flagship programme of Govt. of India on Sanitation) goal means constructing 120 million toilets (110 million in rural and 10 million in urban areas) by 2nd Oct, 2019

- which means more than 65000 toilets everyday.

- And behaviour and practice of at least 120 million families need to change.
Broad challenges in sanitation in Chhattisgarh

- **Rural Sanitation**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH w/o toilets</td>
<td>60%</td>
<td>26L HH</td>
</tr>
<tr>
<td>Defunct toilets</td>
<td>58%</td>
<td>10L HH</td>
</tr>
<tr>
<td>Schools w/o toilets</td>
<td>3%</td>
<td>1K</td>
</tr>
<tr>
<td>School toilets w/o water</td>
<td>6%</td>
<td>3k</td>
</tr>
<tr>
<td>Anganwari w/o toilet</td>
<td>50%</td>
<td>21k</td>
</tr>
<tr>
<td>Anganwari toilet w/o water</td>
<td>53%</td>
<td>23k</td>
</tr>
</tbody>
</table>

Map of Chhattisgarh State

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*WaterAid*
Ecosan intervention in Korba, Chhattisgarh

- In the villages of KORBA district in Chhattisgarh, open defecation is a common problem.
- In the remote tribal village Dhodipara (total HHs-132) at the time of intervention the sanitation coverage was nil.

Inconvenience, and health issues for women, children, and aged people.

Proximity of forest also exposed them to wild animals.
THE PROGRAMME INTERVENTION

- Focus of the intervention was to sensitize community on safe disposal of human excreta.
- For demonstration two **leach pit toilets** were constructed.

But in the first monsoon the families experience the overflow of water from the pit.

The result was—programme suffered a setback and families reverted to open defecation.
THE REALIZATION TO PROMOTE APPROPRIATE TECHNOLOGY

It was realized that being high water table area prototype leach pit model can not succeed.
Ecosan was introduced as a technological option in this Village but we faced challenges on two aspects:

- Making EcoSan toilet cost effective
- Convincing the community to adopt Ecosan toilet
Innovating the model

Standard EcoSan toilet (cost-USD 254/-)

Locally modified toilet (Cost USD 190/-)
## Convincing the community

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Strategy adopted</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Mental barrier</td>
<td>(i) Effective IEC - pamphaltes, wall murals, short film in local language on benefits of ecosan over conventional toilet</td>
</tr>
<tr>
<td>- Different pattern of toilet usage (separate places for defecation and cleaning, water not used for flushing, pouring ash after every use)</td>
<td>- IPC, Continous follow-up for usage</td>
</tr>
<tr>
<td>- Manure of human faeces</td>
<td>- Broke the mental barrier for human manure through handling and usage</td>
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<tr>
<td>- Collection of urine</td>
<td>- Demonstration of usage of manuare and urine in agriculture, kitchen gardening and horticulture</td>
</tr>
<tr>
<td>(ii) Cost of the toilet (leach pit is cheaper as compared to EcoSan)</td>
<td>(ii) Convincing community through demonstrations on points of cost recovery. Cost recovery is obtained immediately from the use of urine in the kitchen garden, horticulture units followed by recovery from use of manure in the agriculture field (saving the cost of purchasing fertilizer) and lastly from the increased yield of crops.</td>
</tr>
</tbody>
</table>
Key issues on sanitation in rural India

- Leach pit pour flush (universally constructed under the flagship programme on sanitation) is not suitable for areas like high water table areas, hard rock terrain and water scarce regions.

- In rural areas water is not readily available and mostly has to be fetched from long distances. Burden is mainly on women and girls. Pour flush toilets requires precious water to be wasted for flushing and cleaning. This leads to discontinuation of usage.

EcoSan toilet addresses these hindering factors by

- Requiring no water for flushing
- Requiring minimum maintenance
- Being odourless
- Being Spacious
Key outcomes of the intervention

- All toilets under the intervention have shown 100% usage, where the traditional toilets have failed.
- Demand is coming for construction of more toilets.
- EcoSan toilets have also been constructed and in use in hard rock and water scarce areas in 11 different villages in Chhattisgarh and Madhya Pradesh.
Conclusion

• EcoSan toilet is a safe, environmentally and economically sustainable approach to sanitation.
• It is especially relevant to rural areas where water has to be fetched from far places to houses.
• The model of EcoSan toilet is economically feasible and proves sustainable as it can be built within the incentive provided in the Swatch Bharat Abhiyaan, the flagship programme of the Government of India.
• Since, it is suitable for construction in various geographic locations and its usage is also high, policy level interventions for large scale construction of EcoSan toilets under the flagship programme will help in meeting the problem of open defecation in rural India.
Thank you!

Anurag Gupta
Programme Coordinator
anuraggupta@wateraid.org
www.wateraid.org