

INSIGHT SERIES 10 - MUMBAI

Synthesis Document: Wastewater Challenges and Solutions

IRC, SuSanA India Chapter and India Sanitation Coalition organized an Insights session supported by the Ecosan Services Foundation at Taj Land's End, Byramji Jeejeebhoy Road, Bandstand, Bandra (West), Mumbai on 18th November, 2018 from 4 – 6 PM. This two-hour event was attended by about 25 people from the government, private sector, NGOs and academia. The topics covered sewage, faecal sludge and grey water in rural and urban areas.



PRESENT STATUS OF FAECAL SLUDGE, SEWAGE, & GREY WATER IN RURAL AND URBAN AREAS

Wastewater treatment is essential to protect one of our most valuable resources. The Central Pollution Control Board has estimated that urban India generates about 50,000 MLD sewage of which only about a fifth is treated. There are no estimates of the sewage from rural India where it is estimated that about 33% have septic tanks that generate septage

with only a few villages having any arrangements to handle wastewater.

In this scenario, it is necessary to quantify the challenge and one can only guess and estimate the wastewater generated from urban and rural areas. Besides, there is no uniformity in the collection and handling of wastewater with each area adopting a different system of waste management. It is observed that proper solutions for sludge disposal are generally lacking both in the rural and urban areas. Towns and cities have relied excessively on centralized sewage systems or



informal mechanical and manual septic tank pit emptiers. Rural India relies pre-dominantly on manual pit emptiers, typically manual scavengers.

Sludge management is usually limited to a de-sludging service that is provided by municipal agencies or the private sector. The recent proliferation of mini-sewage treatment plants in urban housing complexes comes with its own dangers. There have been many reported deaths caused by poorly equipped pit emptiers employed by unskilled plant operators. There is a similar danger associated with faecal sludge treatment plants as well. This is the other aspect of the unregulated market for maintaining privately-owned and operated sewage treatment units.

DIALOGUE ON WASTEWATER CHALLENGES AND SOLUTION

Indian Sanitation Coalition, IRC, TARU and SuSanA India Chapter organized a dialogue on the 18th of November, 2018 in Mumbai. This discussion focused on wastewater challenges and solutions and deliberated on issues faced with the management of sewage, faecal sludge, and greywater in rural and urban areas.

This engaging discussion had a multi-sectoral representation with 25 participants from the government, private sector, NGO's and the academia. India's large population and the rising pollution levels make the water scarcity concern very critical. With depleting freshwater sources, water treatment is absolutely imperative to meet the increasing industrial, agricultural, and domestic demands.

HIGHLIGHTS FROM THE DIALOGUE

India needs a comprehensive methodology for wastewater management. The limited and inadequate resources today means that whatever is available must be utilized wisely. Managing and treating wastewater is a huge part of that. The participants deliberated over the gravity and shared their experiences about the treatment of black and grey water in a cost-efficient way from an end user perspective. The key highlights that emerged from this discussion

included:

DEVELOPING & IMPLEMENTING STANDARD PRACTICES FOR STAKEHOLDERS

To deal with the existing wastewater management challenges there is a need to establish standardized practices. Consulting the users of wastewater or sewage is absolutely necessary. For example, if farmers are users, their concerns about using wastewater or sewage should be addressed and they should be included in the process for them to better understand the framework. While developing the standards, it is imperative to balance the concerns of the users with the costs and consequently provide an appropriate solution.

Farmers use wastewater from municipalities under contracts in several cities of Gujarat. These cities have no sewage treatment plants but have sewage or drain networks. The water is transmitted to sewage farms where it is naturally treated. However, there are problems with this system as it can be unhygienic for agriculture. This is evident from a case in Bhopal when the collector ordered the destruction of irrigated crops with sewage on health concerns. Besides, the farm workers do not like working with human waste because of the social stigma attached to it in our society. However, Karnataka has recognized that sewage and sludge can be reused in agriculture. Water from sewage is recycled for industrial and non-potable urban use. For instance, thermal power plants have been mandated to use treated sewage water. Additionally, the state government is executing a ₹ 2,300 crore project to transport sewage treated to secondary levels to three districts adjacent to Bangalore for reviving tanks. In turn, they will be used to irrigate more than 50,000 hectares of drought-prone lands¹. Depending on the crop, the risks of irrigating crops with sewage are relative.

FAECAL SLUDGE MANAGEMENT AND THE ROLE OF ULBS IN MANAGING WASTEWATER

There is a need to deconstruct the present faecal sludge and septage management narrative. In many ULBs, presently efforts are made to narrowly look at it as a part of

the solution, like the mainstreaming private entrepreneurs. But this is being done without any dedicated treatment plan. There is an importance of looking at the forward and backward linkages to ensure that faecal sludge/wastewater is safely managed. The emphasis should be on the need to engage with the local systems and stakeholders simultaneously for a safely managed solution, otherwise, it can be seen as the movement and not the management of the risk associated with faecal/wastewater.

FAECAL SLUDGE MANAGEMENT IS NOT REALLY CHEAPER THAN SEWAGE TREATMENT

Faecal sludge and sewage treatment plants are complementary to each other. The indiscriminate disposal of sewage and sludge causes a rise in pollution levels. Installing sewage networks reduces the potential for reusing human waste. This paradigm needs to be revisited. Untreated and treated wastewater need to be handled differently as this would exacerbate inequities in access. The Confederation of Indian Industry has a task force for promoting the use of sewage by thermal plants. Bharat Electronics Ltd. has made an investment of ₹ 13.5 crores² to treat sewage in Bangalore and generate 10 million liters per day to rehabilitate a lake. A template is being developed for a special purpose vehicle to encourage more such activities.

INVOLVEMENT OF COMPANIES BEYOND WASH IN SCHOOLS

It has been a challenge to get companies involved in wastewater treatment as they are focused on WASH in Schools. Only a few state governments have been actively promoting the reuse of excreta under public-private partnerships.

CLEAR OWNERSHIP OF WASTEWATER

It is necessary to determine who owns the wastewater – farmers or the city. The policymakers need to clearly determine this while developing treatment and reuse options. For example, In Bangladesh, people in rural areas own the wastewater but not in urban areas. In Pune, the irrigation department had allotted 900 MLD (million litres per day) of water to Pune Municipal Corporation with the

understanding that 500 MLD is to be treated and returned for irrigation³. However, due to poor treatment, the farmers are unable to use the water.

ALTERNATIVE FINANCING MECHANISMS TO SUPPORT INFORMAL ENTREPRENEURS FOR TREATMENT AND REUSE OF SEWAGE AND SLUDGE

While rural areas mostly have two-pit latrines, small cities have installed small sewage treatment plants from where the effluents meet the prescribed standards (mainly BOD) of the Central Pollution Control Board norms⁴, however, they contained heavy metals and helminth eggs. Although, some studies display a relatively low risk in wastewater from heavy metals when used for irrigation. To understand the issues associated with heavy metals in wastewater a more in-depth study is necessary. Companies have been interested in using wastewater because of high water charges for commercial connections. Many companies prefer to use treated water for its purposes owing to this cost. Excel Industries in Mumbai procured sewage from the municipal corporation for its use. Orchid Hotels recycled its wastewater for non-potable⁵ use. Blackwater is a challenge even in rural areas. Certain sector experts claimed that nearly 60% of toilets are poorly made and the waste is collected in ill-designed large septic tanks. These are the two main sources of black water and if untreated, it leads to deferred defecation.

CONCLUSION

Rising population, urbanization, and industrialization has led to an almost unmanageable wastewater problem in India. This is leading to toxic contamination of our water sources. In order to work towards achieving Sustainable Development Goal 6, it is essential to plan holistically for urban and rural areas, looking at water resources on which they draw from (and to which they return). To influence planning at the levels of Local Government, Civil Society Organizations (CSO) working in the water and sanitation sector needs to be well informed of the interconnectedness between water resource, water supply, and wastewater.

[1] <https://www.thehindu.com/life-and-style/homes-and-gardens/waste-water-to-the-rescue/article23528186.ece>

[2] <https://www.thehindubusinessline.com/news/bel-to-set-up-135-cr-sewage-plant-to-restore-doddabommasandra-lake/article22777571.ece>

[3] http://icrier.org/pdf/pune_6feb13_new.pdf

[4] <http://cpcb.nic.in/GeneralStandards.pdf>

[5] <http://www.greenhotelier.org/best-practice-sub/case-studies/indias-eco-pioneer-the-orchid-mumbai/>

For more information on the “Insights” knowledge series visit the India Sanitation Coalition [website](#).

This document is a product of the Insights Series; developed by IRC, India Sanitation Coalition and Taru Leading Edge.

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