

Waste Water Management: Inaction No Longer an Option

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Abstract: *I had an opportunity to visit Waste Water Treatment and was fortunate enough to witness the unfortunate condition of a Waste Water Treatment Plant in Jalandhar which discharges half of its sewage as untreated. Another example would be a local slaughterhouse in Pathankot without an operative Treatment Plant; one of worst kept secrets, as a matter of fact. All this time, while building indoor toilets has been at the government's forefront, the actual treatment succeeding this noble cause is yet to be thrown adequate light upon. The country has less than 30 percent installed capacity to treat its household waste water. With the population ever increasing and in the wake of industrialisation, the problem pushes the Indian community on the brink of a catastrophe.*

Keywords: Environment, Sewerage Plant, Process, Threats, Future Plans

1. Introduction

The appalling issue of Waste Management need not be explained by any data or spreadsheet for our eyes seems to be the best judge in this case. India, despite of its booming economy ranks exceedingly poor in regard to waste management, be it solid (for which it by the way has virtually zero infrastructure) or sewage waste treatment (where infrastructural capacity always falls short of the demand). A recent visit to a Sewerage Treatment Plant was an eye-opener. On the day of its inauguration, the sewerage inflow exceeded the capacity by 25 million litres per day (or 25 mld). The original installed capacity was 100 mld; an up-gradation later increased it to 125 mld. However, the intake now in 250 mld and by the time infrastructural capacity reaches 250 mld, the inlet quantity would be, say, 500 mld!

India's business environment represents a paradox. A paradox because on one hand we have entrepreneurial minds that run giants like Flipkart and Snapdeal while on the other we're faced with heavy mismanagement in the sphere of public infrastructure.

2. Waste Water: Definition and Meaning

Wastewater is any water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants and concentrations. Industrial site drainage (silt, sand, alkali, oil, chemical residues), industrial cooling waters, industrial process waters, organic or bio-degradable waste, including waste from abattoirs, creameries, and ice cream manufacture, organic or non bio-degradable/difficult-to-treat waste (pharmaceutical or pesticide manufacturing), extreme pH ranges (from acid/alkali manufacturing, metal plating), toxic waste (metal plating, cyanide production, pesticide manufacturing, etc.) solids and emulsions (paper manufacturing, foodstuffs, lubricating and hydraulic oil manufacturing, etc.), agricultural drainage, direct and diffuse. (1)

The Domestic Sewage Treatment Plant located in Pholriwal, near Jalandhar is the inlet point for the sewage of the entire Jalandhar city and its suburban area and nearby villages. As mentioned, the plant runs on half the capacity required and is being rigorously upgraded.

Upon treatment, the water, fit for irrigation but not for household purposes is discharged in the river Satluj. Although, the water discharged effects the flora and fauna of the river ecosystem, it is way better than discharging raw sewage; curiously half the sewage, the one beyond the plant's capacity is discharged raw into the river.

2.1 Waste Water Treatment: Process (2)

Wastewater treatment consists of applying known technology to improve or upgrade the quality of a wastewater. The idea of treating wastewater involves collection of the waste water at a particular location and then subjecting it to various treatments. The process is carried out in a continual manner with the large quantities of water received being chipped into batches.

A key technique used in Waste Water Treatment is its digestion by microbes; a complete digestion is brought about either in presence of oxygen or in its absence, the former being aerobic digestion and the latter being anaerobic digestion. Empirically, it has been derived that anaerobic digestion yields better effluent quality than the aerobic pathway.

2.2 Untreated Waste Water: Harms and threats

21% of communicable diseases in India stem from unsafe water. A Yale University study released in late January ranked India 124th out of 178 countries on the 2014 Environmental Performance Index (EPI) in terms of access to water and sanitation. (3)

According to India's Central Pollution Control Board, the country has an installed capacity to treat only about 30% of the household waste it generates – the rest is released into open drains or straight into the ground. And just two cities, Delhi and Mumbai, which generate around 17% of the

country's sewage, have nearly 40% of its installed capacity. (4)

90% of households in Delhi are considered to have adequate sanitation because they have indoor toilets, almost all of Delhi's untreated wastewater flows into the Yamuna River, a source of drinking water for cities downstream. (5)

In India still, adequate sanitation is often limited to indoor toilets, and not what goes beyond, which is not only equally important but equally crucial.

If India were to widely deploy adequate treatment technology, the country would be able to significantly expand its available water supply, both for potable and non-potable use. The economy and the people shall reap the benefits.

There is cause for hope. India's investment in water and sanitation, including treatment systems, is still low but has increased over the past decade. Results are far from ideal, but nonetheless encouraging. For example in 1980, rural sanitation coverage was estimated at 1%. In 2008, it had expanded to 21%. The ministry of micro, small and medium enterprises and the National Innovation Council also recently announced the launch of the India Inclusive Innovation Fund, designed to invest in several socially-relevant sectors such as water and sanitation. (6)

3. Waste Water Treatment: Twelfth Five Year Plan (7)

A government report on Urban and Industrial Water Supply and Sanitation for the Twelfth Five - Year Plan (2012-2017) highlights the following points about wastewater in India:

- Urban and industrial India will have huge implications on the use of water and discharge of waste
- Cities worry about water, but not the waste this water will generate
- The challenge of sewage collection and treatment has not received adequate attention
- No Indian city is in a position to boast of a complete sewerage system, which can keep up with the sanitation and pollution challenge
- The capital intensity of the current waste system results in the fact that cities can only provide for a few and not for all
- If sewage systems are not comprehensive – spread across the city to collect, convey and intercept waste of all – then pollution will not be under control

The government report says, "The cost of a wastewater treatment plant depends on two key factors -- the quality of raw influent and the quality of the receiving medium." It adds that most cities in India do not have facilities to treat human excreta or chemical industrial waste.

4. Conclusion

A suitable and technologically advanced Waste-water treatment system covering the aspects of the process holistically must be brought about to affect increased

standards of health. Inaction is no longer an option. The last resort in my view shall be partial involvement of private players and on top of that rigorous and proper urban planning and mapping. In view of the Great Economic Boom that seems on its rise, the whole country shall need a make-over.

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