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How should we approach faecal sludge management?

(<https://practicalaction.org/blog/author/birupakshya/>)

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June 8th, 2016

Faecal Sludge Management (FSM) being the need of the hour, planners and policy makers must invest time and energy in research. As this is completely new to India and yet to develop a market and demand, I got an opportunity to visit Indah Water Konsortium, Malaysia to see their faecal sludge and sewage treatment sites.

INDAH WATER KONSORTIUM SDN BHD (IWK) (<https://www.iwk.com.my/home>) is the national sewerage company wholly-owned by Minister of Finance Incorporated and operates as a private company under the Company's Act. It is responsible for providing sewerage services, operating and maintaining over 5,750 public sewerage treatment plants and 13,000km networks of sewerage pipelines since April 1994 when it was awarded a concession to provide nationwide sewerage services. It is also entrusted with desludging over 1 million septic tanks and managing the sludge that is generated.

They have a mixture of modern as well as early age technologies and are planning to replace all the old technologies with modern mechanical systems over the next few years. Along with some of their senior staff I visited Mechanical Dewatering Unit, Sludge Drying Bed, Trenching site, Geo tubes, Imhoff Tank, Aerated Lagoon, CSTP and SBR. Being a non-technical person, I won't go into the details but rather, highlight the learning and outcomes that every planner in India trying out FSM should keep in mind.

Highly mechanized equipment is the standard feature of most of the treatment sites at present. There are several logical reasons for going for mechanical treatment plants, however one important reason is such plants do not require much land. Usually the land costs are very high in Malaysia. But one needs to accept that mechanical plants really need technically competent people to manage, operate and maintain them.

The energy in form of electricity they use is huge. I learned that 40% of the treatment unit's expenditure is on electricity. This adversely affects the business model of FSM. I also visited **Imhoff Tanks** (https://en.wikipedia.org/wiki/Imhoff_tank) which are a zero energy based treatment technology. However as the mechanical units have many advantages over older technologies they have to go for these. In this context, solar

or green energy could be used to increase sustainability and make it an economic business model.

Initially IWK had not taken into consideration the use of end products like the dried sludge and the treated water. Now they are facing problems disposing of the dried sludge though they are able to release the treated water to the river and have started reusing the treated water in few of their offices. I was told that given a chance to begin again they would start with proper planning for the reuse of the end product. In such a scenario it's very important to plan out the disposal of all the output. Reuse for something meaningful is something the planners must look at. In our projects in India, we are looking at using sludge as manure and there are other possibilities as well. But to a great extent the prior planning of reusing treated sludge or waste water is something which will change the fate of the FSM plan.

The fixed tariff for providing treatment services did not increase at a rational rate over the years. The government could not increase the cost because of the fear that people might not react positively. So the company faced a severe loss. However, the government decided to take over responsibility and took over the



Oxidation Pond



Imhoff Tank

company, originally started as private company. This means the government decided to subsidize the whole business for political reasons, which creates an important question as to whether there was a business plan!

Three of their units are making profit because the users are able to pay a higher amount for services like emptying and transportation as most of their users are commercial buildings. But is it possible in an Indian context? Centralised systems if not privatised may suffer losses. If privatised, could be properly regulated to serve all classes of people, adding another dimension to FSM in India.

Building legislation is something we can think of in a country like India. Here in Malaysia, a builder who constructs more than 30 houses has to provide a treatment plant and hand over it to IWK to maintain and operate. This helps ensure the availability of an adequate number of treatment plants in most of the locations which ultimately help the environment.



CSTP

The relationship between the local authorities and the federal government is worth discussing. Previously, sanitation was the job of local authorities but when this treatment plant was built the federal government took over responsibility. Now the local authorities are taking no interest in the work. Sometimes getting land for different process of treatment is becoming difficult. In a country like India, where a 3 tier system exists, planners need to ensure they keep all of them engaged in the work. The system should be developed in such a way, people responsible for the FSM must be accountable and a social audit is a must for the same reason.

I was amazed to see the work they are doing. While open defecation is unknown to Malaysia I belong to a country where around half the population are practising open defecation, half the toilets are used as store rooms and whoever uses the toilet is not bothered about their sludge treatment. But this visit really gave me a hope. If we can become OD free as [our Prime Minister has proclaimed](http://timesofindia.indiatimes.com/india/PM-draws-up-25-point-Swachh-roadmap/articleshow/52612873.cms) (<http://timesofindia.indiatimes.com/india/PM-draws-up-25-point-Swachh-roadmap/articleshow/52612873.cms>), then we need a reality check with our sludge management systems and policies. Practical Action and some other organizations have started the process but we have a long way to go and much still to be done.



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3 responses to “How should we approach faecal sludge management?”

1. [fondjo franco](#) Says:

[June 10th, 2016 at 4:54 pm](#)

Hello!

I really agree with you about thinking what to do with the end products like treated wastewater, drying sludge by good planning before implementing all project. Along you spoke about mechanical treatment and also energy required to operate and and also maintenance; India is an emerging country but also financial problem.

So i think that emerging technology as DEWATS Could be a big success if well disseminated and also engineer trained in.

i know that it si applied in Asia with success.

2. [Birupakshya \(http://www.practicalaction.org\)](http://www.practicalaction.org) Says:

[June 28th, 2016 at 6:37 am](#)

Dear Franco,

Thanks for the comment. You are right in saying DEWATS could be a big success. We are planning to demonstrate some technologies in Odisha, India and I hope that will provide a scope for replication in other parts of the county.

3. [Makes India Clean \(http://www.makesindiaclean.com/water-treatment-plants/\)](http://www.makesindiaclean.com/water-treatment-plants/) Says:

[December 5th, 2016 at 12:52 pm](#)

Thanks to u for sharing this post

[Makes India Clean \(http://www.makesindiaclean.com/water-treatment-plants/\)](http://www.makesindiaclean.com/water-treatment-plants/)

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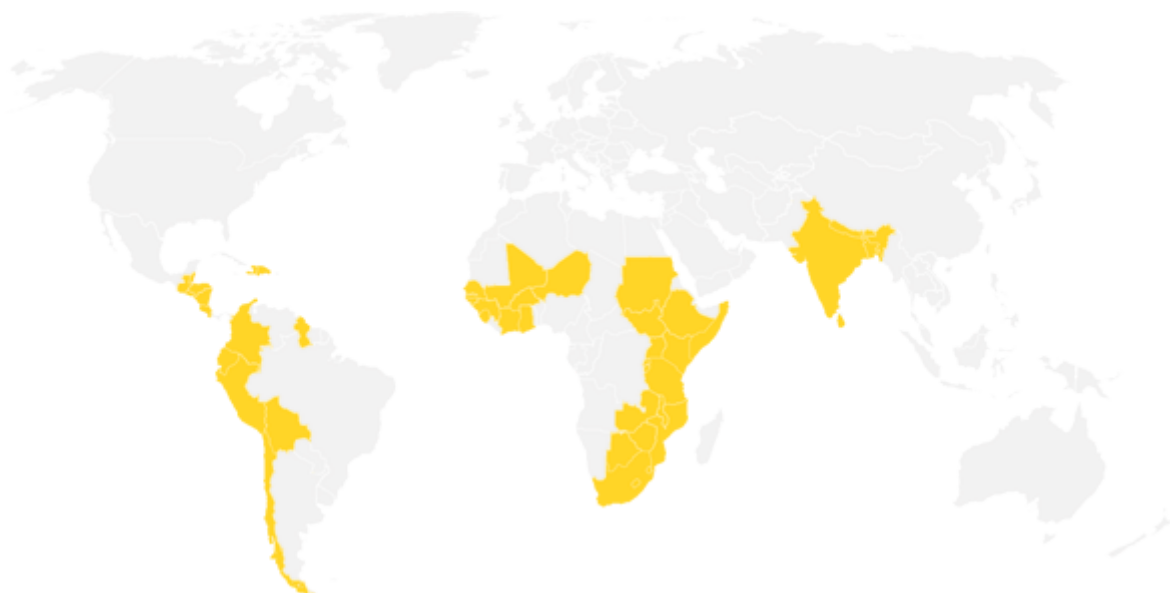
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