

INTRODUCTION

India desperately needs strategies to manage its human waste. For this, we must re-invent and re-work existing technologies for conveying and treating sewage in our cities. The current technology has two problems: one, it is capital-intensive which divides the rich and poor and two, it is natural resource-intensive so that it uses water first to flush, then to convey and then to dispose before or after treatment. This system of waste management, invented in the water-and-money-rich West, has worked well for some but not for all. It is, therefore, essential that we re-think what we mean by sewage treatment and do this fast.

Currently, we know of no other way. Most of our cities and villages do not have sewage systems. We have huge problems of water pollution and disease. Untreated sewage is filling our drains and water bodies and entering into the ground to pollute and contaminate drinking water. All these places are waiting for their sewage systems, which will connect all toilets – converted to the flush variety – to underground sewers. It is also believed that this system will magically connect the waste to the treatment plant, which will then treat it and dispose it in the river or the neighbouring water body. Nobody discusses the cost of first building this system to reach all in the city, and then the costs of conveying and treating the waste.

We do not learn from the cases where sewage systems are failing to keep up with the excreta challenge. The problem is that the current sewage paradigm is based on centralised systems which rely on using large amounts of clean surface water to transport small amounts of human excreta through expensive sewer lines to an expensive sewage treatment facility, which cannot cope with the amount of waste generated, and releases it untreated into the environment. In this way, this system has become part of the environmental problem and not the solution.

The problem is that the world loves its technology for sewage disposal – though It has been least researched, re-invented or innovated upon.

While investments in sewers run into billions of dollars, there is hardly any investment in research for alternative systems.

This is the challenge. We know that what we have is not working. But we do not know what will work better.

But we can change this: by learning from the emerging technologies for decentralised sewage treatment. These are new, but they are being tried and tested. The more we will use, the more we will learn to upscale and improve on them. This is a technology revolution waiting to happen.

It is for this reason that we have put together this volume – a do-it-yourself book to get each one of us to be the change. We have compiled information on the technologies; we have discussed their advantages with their inventors and promoters. Most importantly, we have visited the places where these technologies have been introduced. The aim is not to be the last word in technology manuals, but to be the first in the frontline of change and innovation.

We hope this manual on wastewater technologies will interest you. We hope it will make you a user and a promoter of these new ideas. These technologies are not just about pipes, pumps and cement. They are about ideas, ideology and the practice that can change our future. When we use these technologies, we become part of the mission for new knowledge and new practices, which will not cost us the earth. We become the change.

Do join us in this work. We know that we are still searching, still learning. But we also know that this journey will be more exciting if we all learn together and teach together.

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