

Project Waste

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Abstract

1 Problem Statement

We want to solve the problem of responsible waste disposal for the cities of India. We want Indian cities to look clean and keep its citizens healthy and productive for the betterment of the country. Our aim is to come up with a sustainable solution for the same. The scope of this particular project is currently restricted to the city called *Bengaluru*, capital city of the Karnataka state.

2 Introduction

In India, people are too particular about cleanliness. Their clothes, their houses, their food, everything must be clean. But they make efforts only at micro-levels. In the discussion of solid waste disposal, the job of Indians ends as soon as the garbage is outside the door of their house. They do not realize that the waste that is lying right outside their house still makes their house look filthy and will still make their children sick.

Human activities generates all forms of waste - solid, liquid (effluents) and gaseous (pollution). In this project, we are focussing the solid waste generated by human activities. This solid waste can be categories in 3 broad categories - dry waste, wet waste and hazardous waste. Wet waste is the more organic readily bio-degradable waste, which mainly consists of the by-products of food preparation and the left-over food.

The BBMP has defined 6 stages of solving the problem of waste management [BBMP, 2014]:

1. Collection of waste
2. Segregation of Waste
3. Intra-city activities (like sweeping the roads etc.)
4. Storage of waste
5. Transportation of the waste
6. Processing of waste

Although 6th stage of this pipeline is the most crucial in terms of responsible solid waste management, our focus will be on the first 5 stages (except maybe the 3rd stage). We hope to be able to partner with some companies working on the processing of different kinds of wastes to manage our collections.

Bulk waste generators are defined by BBMP as “*Bulk Generators includes domestic generators-apartments complexes in more than 50 units and institutional and commercial bulk generators who produce more than 10 kg of Municipal Solid Waste*”. Among the bulk waste generators in the city are 15,000 apartment complexes. Any establishment which generates more than 100 kg of wet waste per day is defined as a bulk waste

generator. Apartment complexes with more than 50 flats have been identified as bulk generators. Other bulk generators include restaurants, hotels, and choultries[Chaturvedi, 2014]. [This document on BBMP's website](#) lists the various options available to these bulk waste generators to handle those huge quantities of waste that they produce.

But for the small waste generators, like the individual households, it is very costly and difficult to dispose their waste responsibly. The BBMP does collection of the garbage from a lot of them and from the streets as well, but probably this waste is not processed. It probably is openly dumped into nearby rural areas, where it degrades the soil and troubles the life of the residents. At least before December 2014, a lot of Bengaluru's garbage was being dumped at Mandur [Chaturvedi, 2014]. [We still have to verify whether this is still happening, or has the situation changed. We have some experiments in mind for the same.](#)

3 Status Quo

3.1 BBMP: Bruhat Bengaluru Mahanagara Palike

The Municipal Corporation of Bengaluru, i.e. the BBMP, has been active in the last decade in solving the waste management problem of the city. [BBMP \[2014\]](#) gives a good overview of the arrangements that the BBMP has planned for managing the city's waste.

3.1.1 Wet Waste

3.1.2 Dry Waste

3.2 Hasirudala

3.3 Saahas Zero Waste

3.4 Daily Dump

3.5 Encashea

3.6 The Ugly Indian

Here is what the Ugly Indian's website says about itself [Indian \[2010\]](#):

"We are a group of Ugly Indians (the number is growing everyday) who feel strongly about the state of visible filth in our cities.

Our philosophy can be described simply as: **Kaam chalu mooh bandh. Stop Talking, Start Doing.**

We believe in direct action, with a common-sense problem-solving approach. We do not finger-point or blame the system. We aim to make a change from within - one that sustains because everyone wants it and is comfortable with it.

We believe that there is no magic wand, or silver bullet, to solve India's civic problems. We are realists, and accept that many of India's problems are hard to solve even if the government and public work closely together and money was freely available.

Of our many civic problems, we view the problem of visible filth on our streets as a behaviour and attitude problem that can be solved in our lifetime (or rather, this month). This can be achieved without spending money or changing legislation or systems. It requires coming up with smart ideas to change people's rooted cultural behaviour and attitudes. And making sure those ideas work.

Some of our guidelines are:

1. No lectures, no moralising, no activism, no self-righteous anger.
2. No confrontation, no arguments, no debates, no pamphlets, no advocacy.
3. Don't step on anyone's toes, don't take sides in any ideological debates.,

4. Support existing systems and improve their effectiveness for the greater good.
5. Basically, get real. Treat everyone with sincerity, respect and dignity first, and the greater good will be an outcome.

We feel a 'solution' is a real solution only if:

1. It sustains in the public street for at least 90 days.
2. With no supervision.
3. Is low-cost (ideally free) and easy to implement and replicate
4. Changes the behaviour and attitudes of all concerned
5. Creates minimal change in the daily actions of everyone concerned (nobody should lose a job, lose a source of income, or get seriously inconvenienced because it takes only one Ugly Indian to undo the good work of a hundred others).

We have chosen to remain anonymous as the names and identities of specific individuals are not important. What matters is visible results. And any visible result in the public space needs the support of hundreds of actors (the community). One Ugly Indian in each community can, and must, take the first step - but unless the community responds positively, that step will not produce results. This project is as much about carrying the community along (or as is fashionable to say being inclusive) as about coming up with smart ideas that assist the process of change."

4 Related Work

4.1 Paperman

4.2 Litterati

4.3 Sweden's case

4.4 Waste treatment in USA

4.5 Swachh Delhi App

4.6 Citizen Next

References

BBMP. Solid waste management overview, 2014. URL <http://bbmp.gov.in/documents/10180/512162/Overview.pdf/8b6ef323-429c-4959-aceb-b894f0ee0685>.

Atul Chaturvedi. 6-month deadline for bulk waste generators, October 2014. URL <http://bangaloremirror.indiatimes.com/bangalore/civic/b Bruhat-bangalore-mahanagara-palike-bulk-waste-generators-restaurants-hotelschoultries-bbmp-truck-driving/articleshow/44818194.cms?>

The Ugly Indian. The Ugly Indian about us, 2010. URL http://www.theuglyindian.com/about_us.html.