

BEYOND THE BINS: NOTES ON CAMPUS SOLID WASTE MANAGEMENT

With the launch of the Swachh Bharat Abhiyaan, this October, suddenly, cleaning streets and pavements and talking about cleanliness has become a trend among the young and old, rich and poor alike. But is that the solution to the massive waste generation-collection-disposal problems that have been haunting the bigger cities of late? Are we a sustainable society? For a moment, let us forget the city, the country and the earth, and let us concentrate on our surroundings. We call ourselves scientists, publish the latest in science, technology and design, live in a 400 acre gated community and are by and large well educated and economically stable. What are we doing to ensure that our campus is sustainable? Are we adding to the massive waste disposal problems of the city or are we setting an example for gated communities to be more garbage-aware and reduce the despicable social evil of dumping our waste onto the landfills, poisoning surrounding rural areas?

If not yet, can we, the people, the beneficiaries of this beautiful century old Institute do anything about it? Garbage seems to be an issue that is less popular amongst the elite. We do not seem to care much about what happens to the biscuit wrapper or the banana peel, as long as we throw it in the bin. But is that the end of the story? The easiest response to give is "What can I do about it? It is the campus management's responsibility to take care of it". But can't we spend some time and look beyond to see whether we are adding to the landfills or making correct use of that garbage, which is in reality a resource if used correctly. Can we convince our messes to give back the organic waste to generate bio-gas and reduce the usage of CNG? Can we light our street lamps from the leaves and branches and debris lying all around our departments? Are we disposing the chemical and bio-hazardous waste in the right manner?

Some of these answers are available in erstwhile surveys done by different departments, online. But there is no one consolidated source of information that can answer all our questions. We are attempting to highlight an issue that is crucial to the campus but yet unnoticed by many.

As part of this awareness attempt, two brief reports are included here; the first one is an interview with a social entrepreneur, Mrs. Nupur Tandon, who is the founder of Pro Waste Concepts Private Limited

(OPC) and responsible for the entire solid waste management at the Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR) campus. The second report is by an IISc campus resident, Mrs. Bhama Govindrajan with inputs from Mrs. Shubha Bhat, who are together a driving force behind the campaign started by children, to reduce and segregate waste at Janta Bazaar.

TÊTÊ-À-TÊTÊ WITH A SOCIAL ENTREPRENEUR

Q: What is Pro Waste and what was the inspiration behind creating this social entrepreneurship venture?

A: Pro Waste Concepts Private Limited (opc) was conceptualised and founded in 2012. Back in 2010 when I moved to Bangalore, the city was just waking up to the critical issue of managing waste. I got connected with some NGOs and started volunteering, but later realised that there was a need to work at the ground level. I understood that this issue needed action and implementation than just talking about it. Hence, Pro Waste came into being with a dedicated action plan. Pro Waste is driven by passion and not just by the motive of making profit. Pro Waste sets up de-centralised smart, integrated solid waste management systems which is financially viable and sustainable.

Q: How do you define a zero-waste zone?

A: A zero-waste zone can be defined as a zone where all categories of waste that are generated are disposed off via environment friendly methods implying that the 3 R's (Reduce, Reuse and Recycle) are practised.

Q: What was the inspiration behind creating a near-zero-waste zone at JNCASR and how did the administration respond to the methods outlined by your organization?

A: My work in an apartment complex was recognised by a faculty from JNCASR, who introduced me there. There were few initial meetings to discuss the system and to review the existing system of waste disposal. Once the project was decided and initiated, I got full support of the administration of JNCASR. The waste management project in JNCASR has been successful only because Pro Waste and administration has worked in liaison from its time of inception and until now for stepping up efficiency and reinforcement of the process.

Q: *What are the steps taken by you and your organization for the solid waste management at the JNCASR campus?*

A: The project started off with an awareness and education session. The project was divided into phases and taking care of one facility at a time. It was very important to work at the ground level and connect with the housekeeping staff and teams in the canteens, who are the real stakeholders. Categorisation and mapping of waste was an important step and accordingly processes for segregation, collection, transportation and storage and final disposal was streamlined. The frequent audits and reviews of the ongoing steps to improve the process ensure that the project is sustainable.

Q: *Is such a solid waste management method sustainable for gated communities? If so, can you please elaborate on the main differences between the Bruhat*

Bangalore Mahanagara Palike (BBMP) method of solid waste collection and management and methods devised by your organization?

A: BBMP did make efforts to set up waste management systems but failed mainly because of an inefficient collection system and inadequate disposal technology for various categories of waste. Solid waste management can be successful and sustainable only if all the processes – namely, segregation at source, collection, storage, transportation and disposal, are in complete synchronization and streamlined efficiently.

Q: *What are the firms/institutions/businesses that collect several segments of waste like plastic/papers/packages and recycle/reuse or process them into harmless substances?*

A: There are various technologies available now for processing organic waste, which may be individual- or community-operated composting system. They are scalable as well.

For dry waste and other recyclable waste, there are agencies or dry waste collection centres that collect all kinds of paper/plastic for recycling. For bio medical and bathroom waste, there are technology providers to collect this from your doorstep at a nominal monthly fee. Safe disposal of electronic waste can be ensured by tying up with a certified electronic waste recycler.

Q: *What are your comments on the present waste management system in Bangalore? Are there other social entrepreneurs like you who are making a difference in the city? Can we look up to a future where we have more zero-waste zones?*

A: Bangalore produces four thousand tonnes of waste per day. The processes of segregation, collection, transportation and disposal are not streamlined correctly. Any waste management project can be successful and sustainable only if the above processes are well-synchronised. There are several groups and NGOs who are working in the city in the waste management sector. Of course, it is not impossible to have zero-waste zones. It requires willingness, ownership and persistence to make it happen. A decentralised waste management system is the only sustainable solution to this crisis.



Q: *How has the residential unit on JNCASR reacted to the techniques implemented? How easy or difficult was it to convince them to follow a disciplined manner of disposing the home-generated waste?*

A: The residential unit on JNCASR is not very large. Yes, it is a challenge. It is not at all difficult to convince them; however, accurate segregation at source is not ensured sometimes. The ongoing awareness and training session is going to be the key solution. A frequent reinforcement measure with persistence is definitely the means to achieve the desired results.

Q: *What percentage of electronic waste is generated in the JNCASR campus and is there a company or unit in Bangalore equipped to manage the electronic waste?*

A: Yes, JNCASR has an agreement with reputed electronic waste recyclers. All electronic waste generated in the campus is collected, stored and safely transported to the recycling unit for disposal according to the environmental norms. There are various technology providers in Bangalore which are certified by the local Pollution Control Board.

Nikita (ECE) in conversation with Mrs. Nupur Tandon

CAMPUS SPEAKS: AN INITIATIVE BY THE RESIDENT COMMUNITY

About 6 years ago, some of us, residents of the IISc campus came to know of a positive initiative started jointly by BBMP and the corporate house ITC, called WOW – ‘Wealth from Waste’. Vans from ITC come to the residences and buy properly segregated, reasonably clean, plastic and paper waste by paying a nominal amount per kg of waste. This is to encourage people to segregate their waste. Recycled paper is made from old paper bits, while the plastic is melted along with tar and used in laying out more durable roads. What is very attractive about this scheme is that the kind of plastic doesn’t matter- since eventually it is all melted down – it could be the thick ones such as shampoo or water bottles, or the thin ones such as chocolate wrappers or carry bags. Further, even the smallest piece of paper is recycled - a bus ticket, for example, and not just newspapers!

We can’t expect more support for an eco-friendly disposal of plastic and paper - collection at our doorsteps with a sure plan of proper recycling – and it is a sacrilege not to make use of this. Since then, many of the households in the D, E, NE, and DQ type quarters have been segregating plastic and paper and the ITC truck has been coming regularly once a week to pick up this recyclable waste.

The quantity of household waste is nothing when compared to what the academic departments generate, especially the chemical and biological sciences departments that are laboratory-intensive. We tried to expand this waste-management system to the academic departments as well and succeeded in a small way. CeNSE, SERC, CEaS, and Physics are some of the departments that are making use of ITC services regularly. Further, ITC also takes away e-waste, glass and metal recyclables, as long as everything is properly segregated. We did try extending this to the hostels, but the effort died down due to lack of support.

Workers, who are hired on a contract-basis, do door-to-door collection every morning and empty the dustbins in the campus. However, they do not conduct any segregation (though they have four

different bins) and recycle only the very obvious ones (such as newspaper, milk packets and cardboard). The rest goes to the dumping grounds, and to a large extent, into our own Jubilee Park, along with dry leaves.

A few days back, we started to clean up Janta Bazaar, and utilized the children’s support. We have kept three different bins, for paper, plastic, and food waste. It is a challenge to keep the waste segregated; most people don’t differentiate between plastic and paper, and some biodegradable food waste is also thrown into the wrong bins for good measure. The amount of plastic generated in a day is easily a big, tightly packed sackful. We can make a difference by recycling this properly, and not sending this to the dump-yard. This can and should be extended to all the shops and eateries in the campus.

Many of us in the quarters just have a big pit in our backyards, where we compost our kitchen waste. Nature does all the work; it just doesn’t make sense to tie up kitchen waste in plastic bags and left to stink in some garbage dump. We are fortunate to be living in a campus with enough open space for composting; we should exploit this feature.

All of us at IISc, the management, faculty, staff and students, can definitely do a lot more in this regard. A sustainable solid waste management system has to be implemented at all levels, in such a way that it sets an example to the rest of society. It would be really beneficial if the scheme through ITC could be implemented in an official way everywhere in IISc – departments, hostels, quarters, shops and eateries. Every time a conference is conducted, or on special occasions such as Founders Day, Open

Day, Independence Day or Republic Day, if the plastic and paper cups are collected separately, it can be recycled properly. The management at ITC is willing to come and talk to IISc officials to chalk out a methodology to implement this in a sustainable fashion. It is challenging for sure, but definitely possible. It has been working well in

small pockets for a while in our campus; we just have to extend it to include all areas.

Mrs. Bhama Govindrajan (IISc campus resident) with inputs from Mrs. Shubha Bhat



The Picture shows the children who participated in the “CLEAN JANATA BAZAAR” Campaign