

A REPORT FOR



**BRUHAT BENGALURU MAHANAGARE PALIKE (BBMP)**

**'EXTRACTING VALUE FROM BENGALURU'S DRY WASTE CHAIN'**  
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BY



**SOCIAL VENTURE PARTNERS, BENGALURU**

**PARTNERS**



**WAKE UP CLEAN UP  
BENGALURU**



**BENGALURU CITY CONNECT  
FOUNDATION**



**HAND IN HAND  
CHENNAI**

## EXECUTIVE SUMMARY

### A CALL TO ACTION

The closure of the Mavallipura landfill by the Karnataka State Pollution Control Board in 2012, the protest by the villagers of Mandur, the directives by the Hon'ble High Court of Karnataka and the growing unrest in the City about the need to have a sustainable system to handle solid waste has led to much introspection by the system, and diverse engagement by varied groups to look at the garbage issue through a fresh lens.

The MOU signed between BBMP, Social Venture Partners (SVP) and Wake Up Clean Up (WUCU) in 2013 (Annexure I) sets out a focus on understanding the dry waste chain in Bengaluru and the ways to extract value from it. SVP came forward to conduct a study to fill gaps about the dry waste value flow and information about existing infrastructure for processing / recycling dry waste streams by category. The study consisted of extensive field research, interviews and interaction with over 200 stakeholders. The exercise involved tracking the dry waste cycle from generation to disposal. The focus was on extracting maximum value through an inclusive strategy starting with segregation at source, understanding market forces, expanding investments in processing resulting in maximum resource recovery and hence minimizing waste to the landfill.

The quantification of waste is a contested number. It varies from 3300-3700 tons/day (WUCU 2012 estimate excluding market, street sweeping and leaf waste – Annexure II) to 4300-4500 tons /day (other estimates). Dry waste would be around 46% of the total waste – about 1700 to 2200 tons / day. This dry waste is made up of several streams, most of which already have an existing market value and the remaining 15-20% consists of rejects.

Only 36.6% of the dry waste recovered in Bengaluru is processed within the city, the majority is sent to other cities all over the country. As there is going to be an inevitable increase in quantity of Dry waste due to consumerism, it is therefore an opportunity to create a capacity for it, within our city limits. Hence, the more we create a capacity to process within our city limits, more value is created, and hence lesser waste will end up at the landfill.

SVP and WUCU would like to thank BBMP for the support and opportunity to partner in creating a Swachha Bengaluru. The report has analyzed the players in the dry waste chain, the value addition in the different waste streams, looked at the sorting, aggregating and processing infrastructure and the challenges and opportunities. The Call to action arising from this report is set out below – they have been classified under Administrative / Policy aspects, Market opportunities, integrating existing practices for maximum impact and enabling the shift to a new SWM regime.

### **STRENGTHENING THE POLICY FRAMEWORK AND ADMINISTRATIVE SYSTEM**

***1. Educate and enforce segregation at source. All SWM contracts to be reworked to mandate collection and transportation of segregated waste. Bins in high traffic public spaces. Visible commitment of the system to segregation of all waste streams.***

The foundation of any SWM policy is rooted in segregating waste at source. The State government has passed a law to this effect and we need effective BBMP rules and ground presence that can enforce it. All BBMP waste contracts must mandate collection and transportation of waste in segregated form. At this point of time, the city is struggling in getting waste streams into two buckets of wet and dry waste. Going forward it will be necessary to consider a set of dry waste sub-categories (paper, glass, metal etc.) as done in some Indian cities and internationally. Bins

for these sub-categories could be considered in high-traffic public spaces to build citizen awareness and keeping public spaces clean.

**2. Bulk generators to manage their own waste. Remove any SWM cess for bulk generators. Introduce certification system**

Bulk generators to be persuaded to manage their waste in-situ, or through shared services or have empaneled vendors pick up their waste. There are successful examples of Bulk generators monetising their waste through this route and reducing the load on the BBMP SWM system. These need to be scaled up across the city and BBMP needs to remove any SWM cess laid on such bulk entities. Getting bulk generators to manage their own waste will significantly reduce the burden on the BBMP solid waste management system, allowing for successful decentralization. In due course, an SWM compliance certification system for bulk generators should be introduced.

**3. Move towards a decentralised waste management & disposal system. Plan processing infrastructure through arrangements for every 8-10 contiguous assembly segments**

The current system of transporting and disposing waste at a distant village is both morally wrong and unsustainable. All BBMP policy and processes must work towards a decentralized waste disposal arrangement, with a near 'Zero-waste' to landfill approach. We believe such disposal arrangements in clusters of 8-10 assembly constituencies may be economically viable and manageable.

**4. Need to gravitate towards dealing with sub-categories of dry waste for storage and transportation**

We need a hub and spoke mechanism for sub-streams of dry waste. Sort at the ward level and accumulate specific streams of waste (eg. glass, paper, plastic, etc.) at select centres for storage and transport logistics efficiency. This will allow for maximum value addition by ensuring the sub-category is ready to be received as raw material for the processing and upcycling.

**5. Have third party audits. Act against non-performers**

The need for ongoing review mechanisms cannot be overstressed. Since the city is growing and evolving its strategies, adjustments and corrections must be enabled at short notice. These can be done only if there is a Third Party review mechanism that is recognized and whose performance review recommendations are acted upon to reflect in penal actions and cancellation of contracts.

**RECOGNISE INVESTMENT OPPORTUNITIES FOR ALL DRY WASTE STREAMS**

**1. License Dry Waste Collection Centres (DWCCs) - BBMP built - as well as private premises as licensed DWCCs. Offer subsidy for handling low value waste.**

Currently multiple models exist in operating DWCCs, where the base infrastructure (land and building) is provided by BBMP and run by NGOs, Contractors, RWAs, etc. In our view, BBMP should also encourage private Enterprises (with their own premises) to be designated DWCCs (outside BBMP built sheds). It should lay down the responsibilities of

DWCC operators and BBMP built DWCC should have a mandatory clause for the DWCC operator to accept all Dry Waste brought to the premises (including low value waste). BBMP could consider an additional subsidy for accepting low value waste and commit to a regular waste collection cycle for such waste.

**2. Enforce Extended Producer Responsibility (EPR). Non-recyclable packaging materials need to go.**

In due course, the city will need to move towards an EPR regime, where the manufacturer's responsibility extends to post purchase and consumption of the product. They have to be obligated to set up disposal chains and processes to deal with their packaging material. In cases where the packaging material cannot be processed (ex. certain materials like soiled take-out Styrofoam containers, aerosol cans, non-recyclable plastics, etc.) the BBMP should levy a cess to discourage their usage. Currently the bulk of the recycling/processing capacity is centered in and around 3 or 4 clusters such as Nayandahalli and Kengeri. There is a case for BBMP to consider encouraging more distributed recycling yards across the city, to minimize transportation costs. The Kasturirangan report of the Government of India also stresses on EPR being encouraged by ULB's.

**3. Think 'SEZ' approach to 'Recycling parks'**

Akin to the licensed DWCCs, BBMP should license recycling/processing yards. As we are already aware of the waste streams that can be extracted, it is logical to extend dry waste segregation to the up cycling opportunities in processing. There is a need for the State to encourage and define a framework to enable this. An SEZ like incentivized approach for 'Recycling parks' needs to be considered

**PROVIDING SUPPORT THROUGH INTEGRATION WITH EXISTING MARKET SYSTEMS**

**1. Align Solid waste management (SWM) policy with market dynamics. Destination bound waste processing by categories way to go.**

As BBMP is still in the policy formulation stage, the key question is how can this policy effectively engage with the existing market? In order to do so, it is important to understand the market dynamics, which are based on the break-up of quantification by category (waste streams), generator (household, bulk) and geography (location). Any policy initiative that is planned in isolation of the ecosystem player's economics, motivations is bound to fail.

**2. Need for a comprehensive vendor empanelment system. Recognize waste ownership. Set out roles and responsibilities.**

It is commendable that BBMP has embarked on a Vendor/Contractor empanelment program encompassing all players in the chain – collectors, transporters, aggregators, recyclers, processors, etc. At source, the waste is owned by the generator. With the transfer of the waste from generator to empanelled vendor/contractor, the ownership of the waste transfers to the collector – this clarification should make for lower tender costs since the contractors can sell the waste collected as part of their income recovery. The empanelled collector has to account for the receipt and subsequent disposal of the waste as per BBMP prescribed procedures – in steady state, all subsequent transfers in the waste chain should be to empanelled vendors. **This will result in the informal workers being included in the formal system with attendant benefits.**

## **ENABLING THE SHIFT**

### ***1. Respect data. Build a data repository for SWM, particularly through the empanelled vendor information system***

Lack of reliable data seems to be the biggest, if not the most important issue in resolving the SWM problem. Even the basic figure on the quantity of waste generated in the city remains contested. Hence there needs to be a set methodology for data collection that various organisations can align with and in turn contribute towards a master data base. The empanelled vendor information system will improve the quality of data sets in the future.

### ***2. Invest significantly in citizen and community awareness building measures. Ward level contests / prizes could galvanize action***

Awareness building, communication and continuous education are necessary to change existing mindsets. It might be worthwhile instituting prizes for the cleanest set of wards, to encourage a positive competitive behavior. The local elected representatives and Ward Committee members and RWAs, enhancing neighborhood engagement and accountability, could drive these.

### ***3. Don't forget the long term sustainable solution while addressing the immediate crisis requirements***

Bengaluru is a city in transition with respect to SWM. Consequently while addressing short-term crisis measures, a road map for a transition to a long-term sustainable low waste regime must be worked on, including measures to reduce waste and incentivise recycling and reuse.

The report points to a huge potential in the market for recycling of dry waste and if this opportunity is captured and investments encouraged, Bangalore can convert the present deficit in the SWM infrastructure to seeding a robust industry and create livelihood by maximizing resource recovery in an inclusive and transparent way.