

Waste management in urban informal settlements – ensuring a healthy living environment

- Urban Development Programme, BRAC

Introduction

Bangladesh is urbanizing at a rapid scale. By 2050, half of the country's population will be living in urban areas. Both economic and climate-induced migrants are causing Bangladesh's urban population to swell. Many of them find shelter in low-income informal settlements, or 'slums'. At present, there are 14,000 slums in Bangladesh, with a population of roughly 7 million people. Overcrowded and unhygienic living conditions, lack of access to safe drinking water and inadequate sanitation, livelihood insecurity, violence against women and children are all common realities in the slums.

The urban systems of a city that deals every-day expectations of urbanites and ever increasing migrants faces manifested challenges in ensuring healthy living environment. It is worth mentioning that the huge number of slums and lower income communities are not found in the service recipient list of the formal urban system due to not having formal recognition in the city planning and budgeting. Among many services that a city offers, waste management is always a big talk for almost all big cities of the world. No wonder, the SWM problem is even ample in the highly densely populated communities, particularly, when formal services miss them out. No doubts, a clean city is a healthy city; it offers health, productivity and economy. Study shows that 14 thousand tons of solid waste are being generated in 522 urban centres per day (Enayetullah 2005). Bhuiyan (2010) argues that the projected rise in solid waste per capita in 2025 will be around 0.60kg (commercial and domestic in combined). With such an enormous volume of solid waste only 56 percent are collected and dumped as per the report (Enayetullah 2005). In a recent study conducted by BRAC Institute of Governance and Development (BIGD) it was found that each individual in Dhaka generates 377 gm waste per day on an average. Per capita organic waste produced by each individual daily is 366 gm and inorganic waste is 11 gram respectively. This also varies among high and low income families.

A Pilot for Waste Management to Health

The target 11.6 of SDG 11 emphasizes reducing environmental impact of cities through proper management of solid waste, from collection to disposal, recycling and re-use in a sustainable and environment friendly manner. To achieve this goal, multi-stakeholder involvement, reducing per-capita waste generation and people's behavioral change are the factors need to be addressed. **City wide community level action plan preparation of UDP unfolded a few challenges that informal communities are facing –**

- Urban slums are kept out of formal waste collection

- Municipal vans are not collecting waste from most of the slums
- Slum dwellers are throwing solid waste to open spaces, as there are no other options
- Waste is thrown into ditches and sometimes in open drains, which creates unhealthy environment with possible risk of food and water contamination and clogs the drains

In order to address the challenges regarding solid waste management in the lower income communities and slums UDP undertake a pilot for waste management keeping in mind the SDG targets 11.6. On doing that a city wide community based model has been introduced to promote the reduction, reuse and recycle of waste. Waste to energy conversion, especially conversion of organic waste into biogas and fertilizers is another area of focus for BRAC's waste management strategy. Based on the belief that ultimate transformation is going to take place at the community-level and people's behaviour and attitudes needs to radically shift, the focus is on raising awareness, building capacity, developing entrepreneurship and technologies through the provision of loans and running campaigns as a starter. BRAC Urban Development Programme (UDP) also continues to advocate city councilors and mayors for implementing improved waste management solutions in low-income settlements and establishing the linkage between municipalities, service providers/micro entrepreneurs in waste collection, transportation and dumping. Respective Municipal Corporation ensures the final dumping of waste in the landfills while the community contributes by paying service charges to van drivers.



Figure 1: BRAC Urban Development Programme- Waste Management Intervention

BRAC undergoes through a rigorous process of community action plan (CAP) preparation by active participation of community people, city authorities. They prioritize issues and chalk out solutions. Almost all the 400 low income communities identified solid waste management as important issue that need attention. BRAC then has concatenated the following issues to develop an integrated and sustainable approach for SWM.

- Household to STS collection

- Waste type segregations
- Customized community level vehicle
- Safety measures/gears and tools
- A business model to reduced environmental impact



Figure 2: Solid Waste Management process

BRAC's UDP initiated a number of interventions, starting from raising awareness through group discussions, to providing plastic waste bins, customized waste collection vans, safety tools and gears, dustbins, and constructing concrete structures for households to dump their waste in secondary dumping station. Households in the community are provided with two plastic bins segregated for kitchen waste and reusable waste such as plastic items. A municipal tractor is used to finally dispose the waste to designated landfills from secondary dumping stations. Another BRAC model for waste management has introduced the provision of loans to buy waste collection vans and develop private micro entrepreneurs for waste management services. To sustain this model, households are paying a service charge of Tk. 80-100 for the services. BRAC approaches therefore, have initiated the growth of "green jobs" in the urban low income communities.



Figure 3: BRAC Urban Development Programme- Customized waste collection vehicle

Waste collectors who were previously unemployed are now earning a good income from microenterprises. Improvement of waste management and the introduction of sustainable solutions have not only led to a cleaner environment, reduced waterlogging and reduction in health hazards, it has created jobs, entrepreneurship, built capacity of local government to manage waste and made the community more responsible and responsive. The long term impact is expected to bring significant changes in the environment and ecosystem.

Key Learnings from the Pilot

With an aim to create healthy built environment in informal settlements, BRAC Urban Development Programme will move to the next level by paying more attention to the following issues of SWM:

- Training waste collectors to follow good safety measures is essential – using boots, gloves etc.
- Developing model is essential for ensuring to re-use and recycle solid waste – e.g. converting organic waste into fertilizers and promote urban agriculture
- Developing skills and provide support to micro-entrepreneurs for waste recycling businesses
- Initiating small scale community managed bio-gas plants
- Advocating to minimize use of plastic and encourage biodegradable packaging
- Advocating city authorities to connect the informal settlements to the formal system of waste collection and to keep strategies in their city Master/Development Plan for an integrated Waste Management.