

Providing Waste Collection Services to Low-income Areas

HIGHLIGHTS

- This model provides private waste collection services to areas unserved by public sector waste services and reduces burden on strained public sector operations.
- The model also provides safer formal employment and livelihood opportunities to informal waste pickers and scavengers.
- Collection services reduce negative impact on public health and environment degradation by adopting environmentally sustainable waste collection and disposal practices.



Development Challenge

Waste generation is increasing in low- and middle-income countries; and estimates show that on an average, only a mere 36 percent of the population in low-income countries have access to waste collection services. An approximate 2 billion people across the world are unserved, resulting in waste being discarded as untreated garbage on streets and into water sources or burned in open grounds, leading to increased public health and environmental pollution risks. The unaddressed demand for collection services has led to the emergence of a large informal sector of waste collectors; the United Nations estimates that there are 15–20 million informal waste workers across developing countries. It is estimated that in many cities across developing countries, the waste sector provides livelihood to more informal waste workers than formal waste workers. However, unsanitary working conditions and lack of protective equipment subject informal workers to greater health risks; typically, morbidity among waste pickers is higher than among formal waste collectors. In addition, waste pickers in low-income countries are often subject to social stigma.

Business Model

Several enterprises now complement government collection services and provide residential and community level waste collection services. A number of enterprises provide door-to-door or community-level waste collection services. For instance, Uganda-based Waste Master emerged in response to inadequate collection services in the country. The enterprise charges a nominal fee for collection from households in low-income areas. Many enterprises work with their local governments through public-private partnership models to provide waste collection services.

Some enterprises leverage the informal sector of waste pickers and aggregate them with a view to enhance their productivity and livelihood. Enterprises adopt this model to provide a safer, formal work environment for waste collectors, provide them capacity building services and provide their families better quality of life. Enterprises such as Hasiru Dala (the nonprofit arm complementing the for-profit arm Hasiru Dala Innovations), a membership-based organization, aggregates informal waste-pickers and provide them with skills and training on efficient waste collection and sorting practices.

Features of Waste Collection Services Business Models

Access to waste collection services



- Enterprises provide door-to-door or community-level collection services on a fee-based subscription model. Typically these enterprises complement collection systems run by municipal authorities providing services to unserved areas
- Some enterprises adopt a rewards-based model where customers are offered redeemable points or cash in return for their waste. Such enterprises typically further sell the recyclable waste to recyclers/ recycling mills.

Waste-picker aggregation



- Enterprises aggregate informal waste pickers, typically through a membership model and provide them training on hygienic waste collection and segregation practices, capacity building skills and other support to improve their livelihoods
- Some enterprises connect customers to waste pickers using ICT tools; enterprises identify unorganized waste pickers and provide them ICT tools that enable them in offering informed collection services thereby increasing their productivity and income

Implementation: Delivering Value to the Poor

Awareness

Creating awareness is critical to initiate and increase uptake of waste collection services in developing countries. Wecyclers employs local unemployed youth in its collection activities, who also visit households in Nigeria's slums to impart education on the benefits of using Wecyclers' reward-based service. TakaTaka Solutions conducts door-to-door awareness campaigns on waste disposal practices. A number of enterprises leverage NGO support in conducting awareness campaigns, community sensitization and mobilization activities.

Acceptance

Waste collection enterprises conduct extensive focus groups and surveys with target customers prior to registering them for waste collection services. These interactions help enterprises in designing collection methods, frequencies, timings, type of vehicle and mode of payment (fee-based or reward-based). Conducting this exercise prior to implementing services enables customer stickiness and decreases chances of incurring costs in amending processes. For example, Citizengage learned that most of its customers prefer to have their garbage collected at night and accordingly, it designed its services to incorporate collection at night.

Accessibility

Dismal waste collection services across developing countries owing to limited municipal budgets results in large sections of populations left unserved by collection providers. A number of enterprises, such as TakaTaka Solutions, Wecyclers, and Waste Masters provide door-to-door collection services in hard-to-access and unplanned informal settlements. This level of accessibility translates to higher costs and narrower margins.

Affordability

Enterprises that adopt fee-based collection models charge customers minimal fees for the services. TakaTaka Solutions charges customer USD 1 per month per household. Enterprises such as Wecyclers and Bintang Sejahtera that offer reward-based services enable low-income customers to earn incomes or redeemable points in exchange for their trash; customers can afford useful household appliances and food with these points. Enterprises that involve informal waste workers in their formal service delivery to customers enable these workers to purchase protective equipment, thereby fostering a safer working environment.

Waste collection models may entail various forms of partnership in collection, sorting, and transporting activities. Enterprises partner with local community champions, municipal authorities, NGOs, and waste picker co-operatives to create awareness about environmentally friendly and hygienic waste management practices. Enterprises work with these stakeholders in educating both communities, to convert them to customers, and informal waste workers, to engage them in the enterprises' formal collection services. Enterprises partner with waste processing buyers or the government for equipment and infrastructure. This helps minimize capital expenses for the enterprise. BinBag uses associated recycling companies' collection trucks to collect waste from households. Wecyclers uses sorting facilities owned by the local municipal authority to undertake its waste sorting and bailing processes.

Waste collection models that involve enterprises providing fee-based collection services earn a major share of their revenue from collection fees charged to waste generators. The fee may be charged as a flat fixed subscription fee that is paid by customers at the beginning of the month or the quarter, dependent on the frequency of waste pick-up. TakaTaka Solutions charges its different customer segments a fixed fee: USD 1 per month to low-income households residing in informal settlements, USD 2–3 and USD 5–6 to mid-sized and large-sized households respectively.

Results and Effectiveness

Waste collection enterprises have not only enabled extension of services to previously unserved low-income populations, but also reduced environmental degradation and groundwater contamination caused by improper waste disposal. Service expansion and engagement of informal waste workers has also fueled job growth and increased incomes in developing economies. Improved facilities and waste collection equipment used by private enterprises not only increase waste workers' revenues but also help in increasing their productivity. The use of technology in connecting waste pickers to waste generators in real-time has enabled optimization in scheduling pick-ups and thereby increasing productivity of these waste workers.

Waste collection remains the primary outcome in the business model. Bintang Sejahtera manages 28 tons of organic waste and 25 tons of inorganic waste per month, reducing garbage in Lombok by up to 53 tons on a monthly basis. Wecyclers has diverted 525 tons of waste from reaching landfills in Nigeria.

Enterprises have also provided informal waste workers with a formal and safer work environment along with increased revenue generating opportunities. Hasiru Dala Innovations has helped waste pickers double or triple their income—a waste picker partnering with the enterprise earns revenues in the range of USD 1.5–3 per day which translates to USD 135–150 per month.