

# Private Sector Focus

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## Waste management in developing countries: a challenging business opportunity

**Author:** Felix Busse (felix.busse@deginvest.de)  
 Elleke Maliepaard (elleke.maliepaard@deginvest.de)  
**Editors:** Cordula Rinsche (cordula.rinsche@deginvest.de)

Facing rapidly increasing waste volumes, developing countries need to invest in the collection, transportation, recycling and disposal of waste to improve their service delivery and reduce environmental and health risks. Given the budget and capacity constraints that local governments face, Public-Private-Partnerships gain significance. The market for technologies that deal with Municipal Solid Waste Management (MSWM) is large, providing interesting business opportunities for the private sector. However, there are many challenges and hurdles that have to be faced to make private sector participation in MSWM work. Given the risk profile of the business and the capital constraints in developing countries, DFIs can play an important role by providing maturity matched financing, technical support and advice to the sector.

Many developing countries have witnessed unprecedented wealth accumulation in the last decades. With income growth being a major driver for waste generation, these countries face the challenge of rapidly increasing volumes of Municipal Solid Waste (MSW), i.e. the non-hazardous waste generated from small businesses and households. The increasing waste volumes put the Municipal Solid Waste Management (MSWM) under severe pressure, which encompasses the collection, transfer, treatment, recycling, resource recovery and disposal of waste. The aim of sustainable MSWM is to reduce the volume of generated waste and to increase recycling rates in order to reduce the size of the disposal problem. This in turn has large environmental and social benefits.

The current practice of MSWM is considered to be least efficient in developing countries. UNEP (2011) estimates that the collection rate in low-income-countries is below 70%, of which more than 50% are disposed through uncontrolled landfilling. Open, uncontrolled and unsecured dumps are the most commonly-used method of managing waste. Alternatively, waste is burnt, typically without air and water pollution control. Increasing waste volumes under the current practice is therefore likely to result in larger environmental and health risks in developing countries.

The reasons for the inefficient waste management are manifold. MSWM is essentially the responsibility of the local governments. Besides a lack of technical and managerial capacities it appears that especially institutional and financial constraints are the main barriers. As municipal corporations usually operate under significant budget constraints, they tend to reduce their waste management services to a minimum. UNEP shows that developing countries typically spend more than half of their waste budget on collection alone (mainly labor and fuel costs). Even though recovery, recycling, treatment and disposal are key segments for a more sustainable MSWM, spending on these segments of the waste management chain is generally rather low as these require high investments. Consequently, the public MSWM also forfeits the recycling potential.

This gap is partly filled by the informal sector, which plays a significant role in waste management, especially through informal waste collection and recycling. Typically, one percent of the urban population in developing countries is involved in informal waste treat-

ment. UNEP (2011) estimates, that waste pickers recycle ca. 15% of collected waste, e.g. scrap metal, glass, paper, cardboard and plastics. Samson (2010) highlights that waste pickers also salvage items for re-use, such as food, fabric, shoes, jewelry, electronics, construction materials, pots and utensils etc. These items are either for personal use, or sold. The activities of the informal sector are however subject to health and safety risks as working conditions are far from decent.

For the current MSWM practice to become more sustainable, essential steps need to be taken to improve collection, segregation, transfer, recycling and disposal of waste as well as clean-up existing dump sites.

### Public-Private-Partnerships (PPP)

Considering the steps that need to be taken to improve MSWM, the high need for investment to implement these steps and the prevailing budget constraints of local governments, developing countries are beginning to see the benefits of involving the private sector in MSWM through Public-Private-Partnerships. Private enterprises can, under appropriate conditions, provide MSWM services often more effectively and at lower costs than the public sector.

There are several different possible contractual approaches to private sector participation in waste management. In case of service contracts, the private partner has to provide a clearly defined service to the public partner, e.g. street sweeping, MSW collection or transportation. In the case of a management contract, the private partner is responsible for core activities like operation and maintenance. Enterprises which are engaged in the treatment and disposal of waste usually operate under these management contracts.

Ahmed and Ali (2004) argue that the key elements required for PPP are all to some degree present in developing countries: the public service delivery is inefficient and lacks capacities, the private sector is willing to undertake some parts of the service delivery and the general public is willing to pay for additional service.

## The business case of waste

Following the previous section, there are many opportunities for the formal private sector in MSWM as there is a public demand to improve service delivery that cannot be met by the public sector. In addition, there is a growing market for waste-derived products. Due to the increasing scarcity of resources and the rising costs of extracting them, which results in higher commodity prices, waste is turning into a new form of resources. By using advanced technologies, energy as well as products such as compost, sand, refuse derived fuel and plastics can be extracted from waste and sold to industry units like power plants, fertilizer and construction companies.

Because of the potential of the MSWM sector, private enterprises have expressed interest in PPPs. However there are still hurdles to be taken and challenges to be faced in order to make private sector participation in MSWM work.

## The challenges of the waste business

### *The regulatory and legal framework*

The legal and regulatory framework is generally weak in developing countries, many municipalities lack capacities in structuring sensible PPP models. Due to capacity limitations at the institutional level the PPP models developed and contracts executed may be of poor quality or may not meet the demands of the private sector to ensure a long-term viability of the business. Some of the primary issues of concern are inappropriate definition of roles and responsibilities in the contracts, ensured long-term access to land and provision of waste by the municipality.

### *Waste composition*

The profitability of a project depends among others on the composition, quality and quantities of waste that is processed by the private sector. The composition of MSW differs from one location to another based on lifestyle, economic status and preferences of the people living there and are subject to change. Consequently, a certain flexibility in the production of waste-derived products is required. Furthermore, the waste that is delivered to the processing facilities might have a lower nominal value as the informal sector typically removes basic recyclables at the point of collection. This also affects the viability of the business.

### *Specialized technology*

The waste sector is a specialized industry of high technological standards. Many of the technologies applied for reprocessing and recycling of waste, extraction of energy and other products from waste and gas capture from landfill are quite new and therefore have not been sufficiently tested in commercial use. Furthermore, the applied machinery must match with the waste delivered to the facilities and the local climate conditions. Consequently, one of the challenges is the limited track-record of a specific technology in the respective country. However, even businesses with in-depth experience, thorough research and engineering know-how as well as an understanding of the local market find it difficult to raise sufficient capital to start a business due to risk-profile of the technology.

### *Single vs. multi production line*

Many recycling enterprises have a single production line. While a specialization on single products is viable in terms of economies of scale and process know-how, this focus also makes the enterprise vulnerable to market or waste composition changes. Hence multi product production lines are beneficial for risk mitigation as producing multiple products reduces this dependency. The investment costs for a multi-production line are however much higher. In the capital-scarce markets of developing countries, it is difficult to raise sufficient funds.

### *Market for waste-generated products*

As mentioned above, energy and other useful products can be extracted from waste. Depending on the region and the product, potential customers may however be skeptical purchasing products generated from waste. Consequently, the profitability of a business opportunity differs across markets.

### *Environmental and Social Analysis*

Waste projects include significant environmental, health and safety risks that are linked to the collection, treatment and disposal of waste. Associated problems include for example the contamination of land and water resources, air emissions, and negative impact on health and safety of workers and residents. Consequently, the risk of reputational damage is relatively high.

### *Access to finance*

Many of the listed challenges affect the access to finance. The major barriers include unavailability of long-term finance, high transaction costs and limited collateral due to specialized technical operations and assets.

## The impact of DFIs

Considering the urgency of urban environmental and social problems and the difficulties faced by the private sector to obtain financing from commercial banks for waste management projects, MSWM has attracted increasing attention from Development Finance Institutions (DFIs). As DFIs focus their investments on underserved markets in developing countries where the development impact potential is high, DFIs can play an important role in financing waste by providing maturity matched financing for large investment projects in developing countries.

Further, with the involvement of DFIs and their commitment to the implementation of international environmental and social standards, measures could be introduced that minimize negative impacts of MSW and contribute to an improvement of environmental and social conditions.

The success of private sector participation in MSWM depends on many factors. By the provision of long-term finance as well as technical support, DFIs help reduce the challenges faced by the private sector and thus contribute to the increased private sector participation in MSWM.

### Further reading:

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