

Issue Brief

Solid Waste Management in the Global South

Urban growth has led to a significant increase in consumption and solid waste by-products. This Issue Brief is focused on how the management and disposal of solid waste can be undertaken in a manner that contributes to Equitable Economic Growth (EEG).

An understanding of the role of solid waste management in the context of EEG is important for the following reasons:

→ Due to rapid and unplanned urban expansion the amount of solid waste is increasing day by day while **management and disposal capacity is often overwhelmed**. For example, only around a quarter of solid waste generated in Dori in Burkina Faso is formally managed, while around 50% or less of the population of Nampula in Mozambique have access to adequate sanitation or solid waste management services.¹ This is an issue that will become more critical as secondary cities like Dori and Nampula are growing the fastest.

→ Moreover, **a large number of cities do not have a waste treatment plant**; for many cities that do, their plants are either moribund or operating sub-optimally due to a lack of maintenance and rehabilitation. This frequently results in the large-scale dumping of waste in open landfills, water bodies and river courses. And with over 90% of waste openly dumped or burned in low-income countries, it is the poor and most vulnerable who are disproportionately affected.²

According to the World Bank's *What a Waste 2.0* report, the world generates 2 billion tonnes of municipal solid waste annually, with at least 33% of that not managed in an environmentally safe manner. The report posits that rapid urbanisation, population growth, and economic development will push global waste to increase by 70% over the next 30 years – to a staggering 3.40 billion tonnes of waste generated annually.³ The fastest growing regions are Sub-Saharan Africa and South Asia, where total waste generation is expected to triple and double by 2050, respectively, making up 35% of the world's waste.⁴



Solid waste typology

The type and quantity of waste differs significantly between countries and within urban areas as shown in Table 1.

Table 1: Waste composition related to scale of urban area

Source of waste	Informal settlement	Small town	Medium city	Large city
Household	Predominantly food processing	Predominantly food processing	Wide range of wastes and greater quantity	Wide range of wastes and greater quantity
Commercial	Very limited range probably only from small neighbourhood shops	Limited range of waste mixed with household wastes	Wide range of wastes may be collected from commercial properties	Wide range of wastes may be collected from commercial properties
Industry	Industry unlikely limited as the informal settlements act as commuter areas	Limited range	Limited range often related to agriculture i.e. crop processing or equipment manufacture	More specialist manufacture grouped into identifiable areas
Clinical	Clinics unlikely as population have insufficient funds	Very limited as few clinics	Very limited as few clinics	Waste collected from local clinics and specialist hospitals depending on the size of the population
Animals	Household animals	Household animals only	Household animals and perhaps herds on the peri-urban	Potentially large herds in the poorer areas

Impacts of poor waste management

Poor waste management is endemic in cities and towns in the Global South, and is associated with a range of adverse impacts:⁵

- It is an impediment to drainage, often blocking drains and causing flooding during the rains.
- It is a source of disease and infection, especially clinical waste.
- It is a source of chemical toxicity, especially commercial and industrial waste
- It is a contaminant of surface water which, through bioaccumulation by aquatic plants, animals and fish may then enter the human food chain.

Moreover, greenhouse gasses from waste are also a key contributor to climate change. In 2016, 5% of global emissions were generated from solid waste management, excluding transportation.⁶

Solid waste management practices and the promotion of EEG

As the urban infrastructure and service backlog has built up over time, the planning and engineering challenges of establishing effective waste management and disposal initiatives to high-density informal settlements have become ever more complicated. Recognising such challenges, a number of cities have investigated the value and effectiveness of introducing small-scale, community-

based schemes and technologies to manage solid waste, rather than using capital-intensive formal sector operations.⁷

Indeed, urban local governments can foster EEG by supporting employment creation within informal waste management service providers. They can also encourage the establishment and development of local recycling and waste management businesses. For such outcomes to be achieved, experience demonstrates that active support is required from city mayors and elected officials.⁸



Source: © Cities Alliance / 2019

Box 1: Waste management in Bengaluru, India

Among the largest and richest cities in India, Bengaluru, has struggled to manage the pressures created by urban economic growth, density, and spatial expansion, and their impacts on municipal solid waste infrastructure and service delivery.

Responding to a waste collection crisis precipitated by the mismanagement and failure of the city's largest private landfill in 2012, municipal and state government authorities introduced policy reforms which have fostered an enabling environment conducive to more

efficient and equitable solid waste management services. For instance, in addition to banning the use of low-quality plastic bags within city limits, the Bruhat Bengaluru Mahanagara Palike (BBMP) was the first municipal authority in India to register informal sector waste pickers and scrap dealers.

Bengaluru illustrates many of the challenges, opportunities, and pitfalls that accompany efforts to integrate informal waste pickers during the ongoing restructuring of urban waste management systems.

Source: Cities Alliance. 2019. *Pathways to Equitable Economic Growth in Cities: Pricing Municipal Services in the Global South*. Based on a report produced by The Global Urban Futures Project, The New School, New York.

Solid waste management in informal settlements

Informal settlements are frequently characterised by a lack of solid waste services. These areas are commonly neglected when waste management plans are devised and implemented, as municipal authorities often do not regard these settlements as their responsibility, or as falling within their area of jurisdiction.

As a result, informal settlements often lack access to dustbins and suffer irregular collection from dustbins which do exist. This results in waste overflows, and residents resorting to the daily dumping of wastes in nearby water bodies and drains, in low-lying and vacant lands, and in narrow roads and passages. The result is that such areas are often unsuitable for healthy living. There are many instances when due to flooding and the overflowing of drains, wastes spread and give rise to diseases and other health problems, sometimes rendering informal settlements uninhabitable.

Experience from the JWP-EEG shows that the majority

of informal settlement dwellers are knowledgeable of waste management practices, and are willing to contribute a payment towards schemes that lead to a cleaner and healthier environment.

As shown in Box 2, effective waste management can be delivered by the informal sector. Engaging informal settlement dwellers in the management of their own waste is a way to capitalise on their willingness to contribute, and design schemes suitable for the conditions prevailing in informal settlements and acceptable to the inhabitants.

In many cities in the Global South, waste pickers reclaim recyclable waste as a livelihood, thus helping to clean streets, preventing tons of recyclable waste materials from reaching landfills and incinerators, and generating raw materials and packing materials for use by industry. Conventional approaches to urban solid waste management largely ignore the contribution made by waste pickers to the environment and to industry.⁹

Box 2: Inclusive waste management in Belo Horizonte, Brazil

Brazil is one of the world's most progressive countries in integrating waste pickers in solid waste management systems. Concerns about the environment and the livelihoods of the urban poor, as well as the need to upgrade existing solid waste management systems, prompted municipalities to integrate waste pickers.

Since 1990, Belo Horizonte, inclusive solid waste management has been a municipal priority of the

city, which has introduced legislation that makes recycling, social inclusion, job creation, and income generation the four main pillars of inclusive solid waste management. This led to the adoption of an integrated solid waste management model in 1993, with a focus on promoting segregation at source, in order to minimize the harmful environmental impact caused by the waste itself and maximize the social and economic benefits for the city.

Source: Chen, Martha with Jenna Harvey, Caroline Wanjiku Kihato and Caroline Skinner. 2018. *Inclusive Public Spaces for Informal Livelihoods: A Discussion Paper for Urban Planners and Policy Makers*. Prepared by WIEGO for the Cities Alliance Joint Work Programme for Equitable Economic Growth in Cities. Manchester, UK: WIEGO.



Source: © Cities Alliance / 2019

Policy recommendations

Demand for solid waste services grows proportionally with population and incomes. The solution, in the first place, is the minimisation of waste. Where waste cannot be avoided, recovery of materials and energy from waste as well as remanufacturing and recycling waste into usable products should be the second option.

Practical measures municipal authorities can implement to improve waste management include:

- **Data collection** to understand how much and where waste is generated – as well as the types of waste being generated – allows local governments to realistically allocate budget and land, assess relevant technologies, and consider strategic partners for service provision, such as the private sector, non-governmental organizations and the informal sector;
- **Tax credits and tax relief**, allowances on property taxes, customs duties, or sales taxes to motivate investments in waste management improvements;
- **Environmental improvement funds** established to support pollution reduction and resource protection;
- **Research grants** to stimulate technology development;
- **Product life cycle assessments** predicting the overall environmental burden of products which can be used in certification programs;
- **Bans on materials or wastes causing disposal problems**, e.g. mercury batteries, plastic bags;
- **Environmental rating of industries**: published lists enable consumers to consider whether to buy from polluting companies, e.g. Indonesia's PROPER program.
- **Liability legislation**: laws defining environmental restoration settlements.
- **Clean city competitions** rewarding neighbourhoods and cities that have improved cleanliness.
- **Efforts to move toward a circular economy** are gaining momentum. The circular economy model aims to use waste streams as a source of secondary resources and to recover waste for reuse and recycling. This approach is expected to achieve efficient economic growth while minimizing environmental impacts.¹⁰

End notes

1. Cities Alliance. 2016. *Equitable Economic Growth in your Town or City. A Diagnostic Toolkit*. A Toolkit prepared for Cities Alliance and UNOPS by IPE Triple Line.
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3. Ibid.
4. Ibid.
5. Jha, Abhas Kumar; Bloch, Robin; Lamond, Jessica. 2012. *Cities and flooding: a guide to integrated urban flood risk management for the 21st century*. Washington, DC: World Bank Group.
6. Kaza, Silpa; Yao, Lisa C.; Bhada-Tata, Perinaz; Van Woerden, Frank. 2018. *What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050*. Urban Development, Washington, DC: World Bank.
7. Ibid.
8. Cities Alliance. 2019. *Pathways to Equitable Economic Growth in Cities: Pricing Municipal Services in the Global South*. Based on a report produced by The Global Urban Futures Project, The New School, New York.
9. Chen, Martha with Jenna Harvey, Caroline Wanjiku Kihato and Caroline Skinner. 2018. *Inclusive Public Spaces for Informal Livelihoods: A Discussion Paper for Urban Planners and Policy Makers*. Prepared by WIEGO for the Cities Alliance Joint Work Programme for Equitable Economic Growth in Cities. Manchester, UK: WIEGO.
10. Halkos, George and Petrou, Kleoniki Natalia. 2016. *Moving Towards a Circular Economy: Rethinking Waste Management Practices*. 3. 220-240

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