

Urban solid waste management

Waste management is a problem in rapidly growing urban centres in developing countries. The unsustainable production and consumption patterns result in waste that can harm health and the environment. Poor people often make a living on waste, and this can be beneficial, as long as it is not done in a harmful manner.

Solid waste management has three main components: collection and transportation; reuse or recycling; and treatment or disposal.

Waste has different origins and different properties. The main types are household waste, industrial waste and hazardous waste of various types. A large portion of the waste is often organic, such as foodstuffs or garden waste,

There are several methods to treat waste, but for collected waste in developing countries the most common is disposal at an open dump site. A lot of waste is, however, never collected but is dumped or burnt locally.

Generally, the best solution for improving waste management is often waste prevention, then reuse, recycling and finally controlled sanitary landfilling if the first options are not feasible.

Arguments in favour of preventive measures are:

- Reduced consumption of raw material from nature
- Reduced energy use and pollution from product manufacturing
- Less pollution from waste disposal
- Reduced costs in the management of landfill sites.

So called "extended producer responsibility" is used in some countries to place the responsibility for waste treatment on the producer. This encourages the produ-



Scavengers on a burning garbage dump. The collection and re-use of waste provides a livelihood for many urban poor and is basically positive, but working conditions are unhealthy.

PHOTO: SEAN SPRAGUE / PHOENIX

aggravate unsanitary conditions. The widespread practice of burning waste worsens the often already bad air pollution.

The degradation of organic matter in landfills produces methane gas. It burns easily and causes fires that are difficult to extinguish, and it is a strong greenhouse gas. Serious pollution of groundwater and streams is also caused by water leaking from landfills.

Hazardous waste is often not properly handled, pollutes other waste components and causes health hazards.

Social aspects

Hygiene and cleanliness first and foremost depend on people's attitudes and behaviour. Awareness raising and motivation are therefore crucial in making solid waste management systems work.

Many families depend on waste for their livelihood. Waste management offers opportunities to create income for unskilled poor people through waste collection, sorting and recycling. These activities can be improved by better organisation and safety measures.

Scavengers and their families often live on or near the dump and make a living from sorting and selling waste items for recycling. The presence of hazardous waste and the smoke from burning waste poses serious health risks for the scavengers and their families.

Production and use of compost from organic waste in gardening positively impacts on soil productivity and household income.

Institutional aspects

Urban waste management is a household as well as a public responsibility. It is often carried out by the municipality together with street sweeping, emptying of septic tanks and other sanitation services. Nowadays waste collection and even landfill management are often more or less outsourced to the private sector,

cer to reduce the amount of waste and its negative impact.

Composting is an environment-friendly and simple solution for organic waste that is often successful at the household level. Another option is biogas production, which can be used to produce electricity or as fuel for vehicles.

Waste disposal can be improved by constructing different types of sanitary landfills. Gas can also be collected and used here.

Key issues

Health and environment

Local dumping is unhygienic and promotes infestations of insects, worms and rats, and contributes to ill-health. It is also unsightly, as waste is carried and spread by the wind.

Solid waste is often disposed into drainage systems, causing blockages that

usually under the municipality. The responsibility for some waste types may be split up among authorities, e.g. hospital waste, industrial waste, hazardous waste.

The outsourcing policy is in line with reforms in other areas, but needs careful consideration to be successful. An independent body should be charged with issuing permits and control functions. Urban waste management is often under-capitalised, over-staffed, poorly managed and frequently politicised. Total revenue flows for municipal solid waste services are often too low, yet those contributing through taxes or levies may be under-served.

The location of landfill areas is always difficult and many cities are suffering because the issue has not been timely addressed. A long-term plan is needed that sets aside land that is technically, socially and environmentally suitable.

Strategic areas for support

- Institutional development, including clear division of responsibilities, structural reforms, bylaws and regulation, planning, training, and general management capacities
- Physical planning, environmental impact assessments
- Complementary interventions in environmental sanitation, e.g. drainage, for maximum impact
- Promotion of primary waste collection, sorting and recycling through micro-enterprises
- Safety and health of scavengers and other waste workers
- Hazardous waste management, chemicals policy
- Appropriate technologies for landfills, biogas production and collection systems

- Market conditions, financing systems, incentives, and access to investment funds.

To be aware of

It is possible to design programmes that strengthen very poor households and improve livelihood and health for vulnerable children and women. However, projects in this field could also have an adverse effect if scavengers and poor settlers are evicted without compensation or resettlement, and if unskilled workers lose their jobs when waste management is reorganised or becomes highly mechanised.

The relevant department within the municipal administration is usually weak and poorly organised.

Cooperation partners typically request modern trucks and other hardware. In this sector it is rarely wise to approve such contributions unless the provision of hardware is fully integrated in a process of institutional development and reform.

Systems and technologies used elsewhere might not be appropriate in developing countries where willingness to pay is lower, less waste per capita is produced, and the proportion of organic waste is higher.

Corruption and misguided political interference are common in the waste management sector.

Examples of Sida support

■ Support for cooperation between the city of Tegucigalpa in Honduras and Stockholm on waste management. The work included development of new systems for outsourcing waste handling to private contractors, a pilot study on industrial waste, a public awareness campaign and improvement of hospital waste management practices.

■ Support to Albania in waste manage-

ment. The Ministry of Environment will receive support for capacity building in law implementation and elaboration of a National Solid Waste Plan. The regional authority in Korca will receive support for monitoring and public awareness campaigns. At the local level, solid waste plans will be developed, cost recovery will be enhanced, and there will be piloting of source separation and composting

■ Support for developing the first Integrated Waste Management Plan for Nelson Mandela Bay Metropolitan Municipality in South Africa, including a twinning arrangement with Gothenburg in Sweden. A number of innovative activities have been launched.

Swedish resources

Sweden has a broad range of private enterprises in the waste management field as well as long experience in public utilities. Sweden also has experience of fiscal incentives to minimise waste, such as taxing waste in landfills and extended producer responsibility for a number of products.

Sida references

Available at www.sida.se

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Pure Water – Sida Strategy for Water Supply and Sanitation (2004)

Urban Issue Paper: Urban Water Supply and Sanitation

Urban Issue Paper on Air Pollution

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Tannerfeldt, G and Ljung, P (2006) *More Urban – Less Poor, An introduction to urban development and management*, London, Earthscan

REMINDERS

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| ☐ Is there reliable data on waste types, quantities and collection rates? | ☐ Is there legislation on safety and health of workers in place and implemented? | ☐ Is there willingness to pay for waste services? |
| ☐ Is there legislation on waste management in place and is it implemented properly? | ☐ Is there capacity to operate and supervise the proposed management system or technologies? | ☐ Are there demand, mechanisms and capacity for involving civil society? |
| ☐ Has the country ratified the international conventions on chemicals and waste (Stockholm, Rotterdam and Basel conventions)? | ☐ How will the proposed interventions influence the urban poor, unskilled scavengers and other workers? | |