

How good is solid waste management in Dhaka City?

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URBAN poverty is not merely a question of lack of work and income. It also includes the lack of access to housing, infrastructure, education, health care, transport, and, more important of our interests, the basic services such as the collection, treatment and safe disposal of solid waste. Population growth and the rapid pace of urbanisation pose many environmental challenges for Dhaka City, where more than 37 per cent of the total urban population of the country live. Prior to 1970 refuse management was assumed to be the main responsibility of the public officials whose prime consideration was the quick removal of waste and its destruction. During the 1970s the focus shifted to issues of waste utilisation from economic and technical point of view. Since the late 1980s Solid Waste Management (SWM) in this city has received increasing attention from researchers and policy makers concerned to establish a sustainable management system. Solid waste is regarded as the discarded non-liquid materials from households, industrial and commercial establishments, institutions, and streets, that do not have value any more in the eyes of those who first uses or generate it.

The concept of solid waste management developed gradually over time. In many European countries in the 1660s, burial in cotton or linen shrouds was banned to allow more cloth for papermaking. In 1896, the first combined waste incineration and electricity scheme began operation in East London. Until the

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early 1890s, New York's garbage was mainly dumped in the Atlantic Ocean, polluting the beaches, resulting in protests by the resorts on the shores of New Jersey and New York. Then in 1894, a programme of source separation was implemented on the premise that mixed refuse limited the options for disposal, whereas the separation of wastes at the source allowed the city to recover some of the collection costs through the resale and reprocessing of materials. In the early part of the last century, an ethnic minority in Egypt, the Zabbaleen, was one of the world's first communities to integrate recovery and recycling of municipal waste. It was the environmental movement in the late 1960s, which formally presented integrated Solid Waste Management as a guiding principle for managing the refuse. Since then this notion was widely implemented mostly in the industrialised countries.

In Dhaka City solid waste management has been becoming a serious issue day by day and its management system is in fact a continuous maintenance system. Broadly, the material flow stream of the solid waste from generation to ultimate disposal comprises (a) generation; (b) collection and trans-



Accumulated waste in posh city area

portation; (c) processing (if any) and (d) disposal. To keep the service running, continuous participation of the community receiving the service, as well as the services provided by the City Corporation is required. City Corporation services are mainly centralized affairs, where wastes are collected from a particular location. But privately the wastes are stored in a specific bag, bin or

brought to an agreed point, which are earmarked by the Corporation authorities. In most of the cases these do not materialize. This means that community participation is an important aspect of solid waste management for the city.

Perhaps it may be even more important than in any other urban services. Only recently has the management of solid waste services by communities themselves received attention. Some of the Community based solid waste management projects that are running in city are activities carried out by members of the communities to clean up their neighbourhood. In some cases they earn little income from solid waste. But these projects are limited to some particular areas or neighbourhood and are primarily concerned with the collection and transport of solid waste from their location to a dumping site outside. The final collection and transport of the waste to the final disposal site and operation from these sites is supposed to be carried out by the Corporation.

Community members can participate in solid waste management by contributions in cash, kind or labour. They can also participate by participation in consultation and by participation in administration and management of solid waste services. Community members and local leaders in urban communities play different roles in solid waste management in different parts of the city. These roles correspond to different levels of community participation.

In present Dhaka City, divided into old and new, local leaders can be divided as traditional, formal and informal leaders. Traditional leaders derive their authority from heredi-

tary rights and from their status in the local culture (particularly in old part of Dhaka City). Formal leaders are elected as local representatives of the government (the Ward Commissioners). Informal leaders are influential members of a community on the basis of their personal status or of their activities in community-based organisations such as political parties, religious, youth and women's organisations, and cultural committees. All three types of local leaders may have different roles in solid waste management. Usually formal and informal leaders are more involved in solid waste management than traditional leaders. Involvement in management of solid waste services includes participation in the management of solid waste services and keeping contact with both the Corporation and the community. Traditional leadership in the older part of the city can play a vital role in this aspect.

Households form the largest category of stakeholders in waste management. They have a multifaceted relationship to waste management activities: waste generators, waste service clients, receivers of information and participants in mobilisation for waste management. Households prepare their garbage in such a way that it can be collected by micro- and small enterprises, the local authority or a private company, or by waste pickers, or bought by itinerant buyers. Important roles of households in waste management are to store garbage, set out the garbage at the agreed place and time, use the official disposal sites and maintain private waste facilities. The community leadership has to look into the heterogeneity composition of the community to have better participation and to support households in playing their expected roles. The community leaders should also take the gender, age and income class distinctions for practical consequences for SWM.

There are direct and indirect beneficiaries of urban waste management. Direct beneficiaries are the residents of a community who enjoy cleaner streets and surroundings, businessmen can operate efficiently, residents exposed to fewer diseases. The indirect beneficiaries are the government, which is charged with the responsibility for the services, since cleaner cities make their other responsibilities easier; businesses, for whom the investment or business climate improves with cleaner cities; national and regional governments responsible for environmental health in cities; and citizens of the

country, whose economic affairs are linked to the conditions in the cities.

There is a need for genuine commitment at the household and community level for improved services in solid waste disposal. This involves the need for consultation between the stakeholders, following which there is a trade-off between what people want and what an institution is prepared and/or able to supply. Commitment may depend on the awareness of health, social and economic benefits of improved services and a willingness to contribute to the development and maintenance of the facilities. People may be happy to pay for services if they feel that they have a direct say in decisions: making a contribution is also perceived as a declaration of equality in status. There is also a role for the agency in being willing to encourage communities to make these improvements. In recent years Community-based solid waste management is a reality in many cities in developing countries, although it may take different forms. Given the continuing lack of means and regardless of the type of waste management, community-based SWM will be an important option for Dhaka City to keep its environment clean. To translate the concept into reality the conscious citizens must take the required initiatives.

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Safeguarding vessels against tornadoes

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MOST of the river and sea vessels are prone to the flurry of tornadoes and norwesters due to the fact that the centre of gravity of the vessels become unstable and thereby swing sideways to the left/right like a pendulum. At the time of tornadoes/norwesters, the balance of the centre of gravity of the vessels is lost and they can turn turtle by turning to either side and ultimately sink into the deep water. The other important reason is overloading the vessels with passengers and cargoes beyond their capacity. At the time of tornadoes/norwesters, the natural tendency of the passengers is to seek shelter towards the side opposite to which the wind is blowing. This can be prevented if the curtains of the passenger berths in the vessels are properly planned and set in such a way that the ferocity of the tornadoes does not directly affect the passengers.

These water vessels are constructed to have narrow widths in order to gain high speed; unfortunately it makes the centre of gravity structurally unstable. This gain in speed achieved at the cost of stability inevitably leads to the shift of the centre of gravity of the vessels at the time of tornadoes/norwesters. The following technique, if implemented, could prevent the vessels from turning sideways and save lives. The idea is that all the vessels should be equipped with a set of small canoes or similar light objects such as foam (2 or 3 on each side) stationed on top deck tied with long vertical steel rods erected from the lower deck. These objects should be constructed and installed mechanically (preferably electronically also) so that at the onset of tornadoes/norwesters, the captains/sarengs of the vessels can lower the objects with ease on the water on both sides of his vessel. This technique would surely make the centre of gravity of his vessel stable. There will be an additional advantage with the use of foam which when thrown on the water would soak enough water and thus prevent the vessels from swinging sideways. I would request the proper authority, the Ministry of Shipping and the Ministry of Science, Information and Communication Technology in particular, to take steps to implement the above technique. I hope this, if implemented, after performing some tests, could save many lives and prevent damage to property.

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