

1 Introduction

In 1999 the World Bank published *What a Waste: Solid Waste Management in Asia* (Hoornweg and Thomas 1999), with an estimate of waste quantities and composition for Asia. In the intervening decade more accurate and comprehensive data became available for most regions of the world. OECD-country estimates are typically reliable and consistent—added to these were comprehensive studies for China and India and the Pan-American Health Organization’s study for Latin America. Therefore a global update of the 1999 report is possible, and timely.

Municipal solid waste managers are charged with an enormous task: get the waste out from underfoot and do so in the most economically, socially, and environmentally optimal manner possible. Solid waste management is almost always the responsibility of local governments and is often their single largest budget item, particularly in developing countries. Solid waste management and street sweeping is also often the city’s single largest source of employment.¹ Additionally, solid waste is one of the most pernicious local pollutants — uncollected solid waste is usually the leading contributor to local flooding and air and water pollution. And if that task were not large enough, local waste management officials also need to deal with the integrated and international aspects of solid waste, and increasingly with demographic change in the work force, employment generation, and management of staff — both formal and informal.

¹ Solid waste management — formal and informal — represents 1% to 5% of all urban employment. As formality increases so do issues of labor organization, health and safety, ageing demographics (solid waste workers tend to be younger), the friction between ‘sanctioned’ and ‘unsanctioned’ recycling, and producer pay arguments and apportioning costs and responsibilities.

Managing municipal solid waste is an intensive service. Municipalities need capacities in procurement, contract management, professional and often unionized labor management, and ongoing expertise in capital and operating budgeting and finance. MSW also requires a strong social contract between the municipality and community. All of these skills are prerequisites for other municipal services.

The original *What a Waste* Report provided waste estimates for South and East Asia. This waste stream represents about 33% of the world’s total quantities. Most growth predictions made in *What a Waste: Solid Waste Management in Asia* were reasonably accurate and in most cases, even taking into account the recent economic contraction, waste growth estimates were conservative. This is especially true in China. In 2004, China surpassed the US as the world’s largest waste generator. In 2030, China will likely produce twice as much municipal solid waste as the United States.

The main objective of this updated *What a Waste* Report is to provide current municipal solid waste



◀ Ferry men parking their boats on Buriganga River, Dhaka. Photo taken as part of Development 360 project.

BOX 1

What a Waste 1999: What's Changed (and What Hasn't) in the Last Decade

- ▶ *What a Waste* (1999) predicted that by 2025 the daily MSW generation rate in Asia would be 1.8 million tonnes per day. These estimates are still accurate. At present, the daily generation rate in South Asia and East Asia and the Pacific combined is approximately 1 million tonnes per day.
- ▶ Low-income countries continue to spend most of their SWM budgets on waste collection, with only a fraction going toward disposal. This is the opposite in high-income countries where the main expenditure is on disposal.
- ▶ Asia, like much of the world, continues to have a majority of organics and paper in its waste stream: The combined totals are 72% for EAP and 54% for SAR. Growth in waste quantities is fastest in Asia.
- ▶ There is a greater emphasis on labor issues: in high-income countries, demographics and immigration are critical factors; in low-income countries working conditions and integration of waste pickers has gained in importance.
- ▶ Rates of recycling are increasingly influenced by global markets, relative shipping costs, and commodity prices.

Lisbon, Portugal, used aluminum cans are deposited into a container for recycling ▶



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generation, composition, collection, and disposal data by country and by region. Both developing and developed countries are included. This report makes projections on MSW generation and composition on a country and regional level for 2025. This should provide decision makers with a sufficient foundation on which to base waste management policy decisions. In most cases further local analysis will be needed, but this report is intended to provide a broad global review. For a summary on the main differences between the data presented in the 1999 publication and this publication, please refer to Box 1.

Solid waste is inextricably linked to urbanization and economic development. As countries

urbanize, their economic wealth increases. As standards of living and disposable incomes increase, consumption of goods and services increases, which results in a corresponding increase in the amount of waste generated. This report estimates that at present almost 1.3 billion tonnes of MSW are generated globally every year, or 1.2 kg/capita/day. The actual per capita rates, however, are highly variable, as there are considerable differences in waste generation rates across countries, between cities, and even within cities.

Solid waste is generally considered an 'urban' issue. Waste generation rates tend to be much lower in rural areas since, on average, residents are usually poorer, purchase fewer store-bought

items (which results in less packaging), and have higher levels of reuse and recycling. Today, more than 50 percent of the world's population lives in cities, and the rate of urbanization is increasing quickly. By 2050, as many people will live in cities as the population of the *whole world* in 2000. This will add challenges to waste disposal. Citizens and corporations will likely need to assume more responsibility for waste generation and disposal, specifically, product design and waste separation. Also likely to emerge will be a greater emphasis on 'urban mining' as the largest source of materials like metal and paper may be found in cities.

Waste is mainly a by-product of consumer-based lifestyles that drive much of the world's economies. In most cities, the quickest way to reduce waste volumes is to reduce economic activity—not

generally an attractive option. Solid waste is the most visible and pernicious by-product of a resource-intensive, consumer-based economic lifestyle. Greenhouse gas emissions, water pollution and endocrine disruptors are similar by-products to our urban lifestyles. The long term sustainability of today's global economic structure is beyond the scope of this paper. However, solid waste managers need to appreciate the global context of solid waste and its interconnections to economies and local and global pollution.

This report makes projections for MSW generation in 2025, based on expected population and economic growth rates. As countries, particularly India and China, continue their rapid pace of urbanization and development, global solid waste quantities are projected to increase considerably.

