

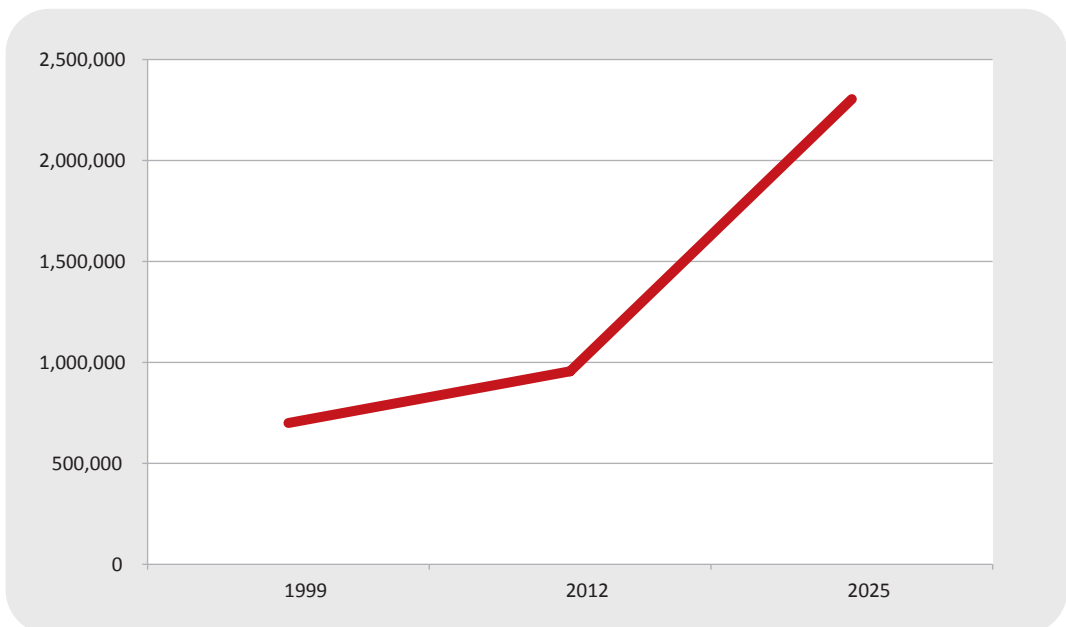
1. The waste crisis in Asia and the Pacific and the urgent need for change

1.1 Escalating waste

Rapid urbanization, demographic growth and economic development are changing the Asian–Pacific landscape and generating a tremendous amount of waste. The rise in well-being and prosperity of urban residents links closely to increased consumption and production patterns with consequences for waste streams.

Increased municipal solid waste is particularly noticeable in low- and middle-income countries, where consumption has previously been relatively low. In these countries, the rate of waste generation has risen quickly and is expected to accelerate over the next decade and beyond (Figure 1).

Figure 1. Total amount of waste (tonnes) generated per day in the Asia–Pacific region



Source: ESCAP, based on World Bank data. See World Bank, *What a Waste: A Global Review of Solid Waste Management*, Urban Development Series Knowledge Papers (Washington, D.C., 2012).

1.2 Overburdened local governments

From small towns to megacities, everyday waste often outweighs the management capacity of local governments. The Asia–Pacific region’s waste crisis is a combined issue of increased waste and poor management. Limited technical understanding, financial resources and regulatory support restrict many local governments’ ability to keep up. The situation has become extremely urgent and a paradigm change is required.

This is particularly the case in secondary cities and small towns, where the majority of the region’s urban population live. And it is here that the bulk of the region’s urban population growth is expected to occur.¹ Overwhelmed and seeing no alternative, too many local governments are relying on open dumping and uncontrolled landfilling to cope with their waste management demands. But dumps and uncontrolled landfills present numerous issues for a municipality and its residents. First, there is the expense. Many dumps are located far from where waste is generated and collected, which thus entails higher transport costs for waste collection agencies. An average of 20–50 per cent of an annual municipal budget in low- and middle-income countries is spent on solid waste management, of which up to 80–90 per cent can be spent on waste collection alone.²

Then there is the range of social and environmental issues. Dumpsites tend to produce a foul odour, which communities find unpleasant. Far worse but less noticeable, leachate, trace elements and heavy metals released from the waste can pollute aquifers and waterways that provide the water used for drinking and cooking; they also pollute the soil and food crops, which can affect long-term food security and create public health issues. Openly dumped waste attracts vermin, resulting in a higher incidence of disease among local populations, and burning waste pollutes the air and can lead to respiratory illnesses.

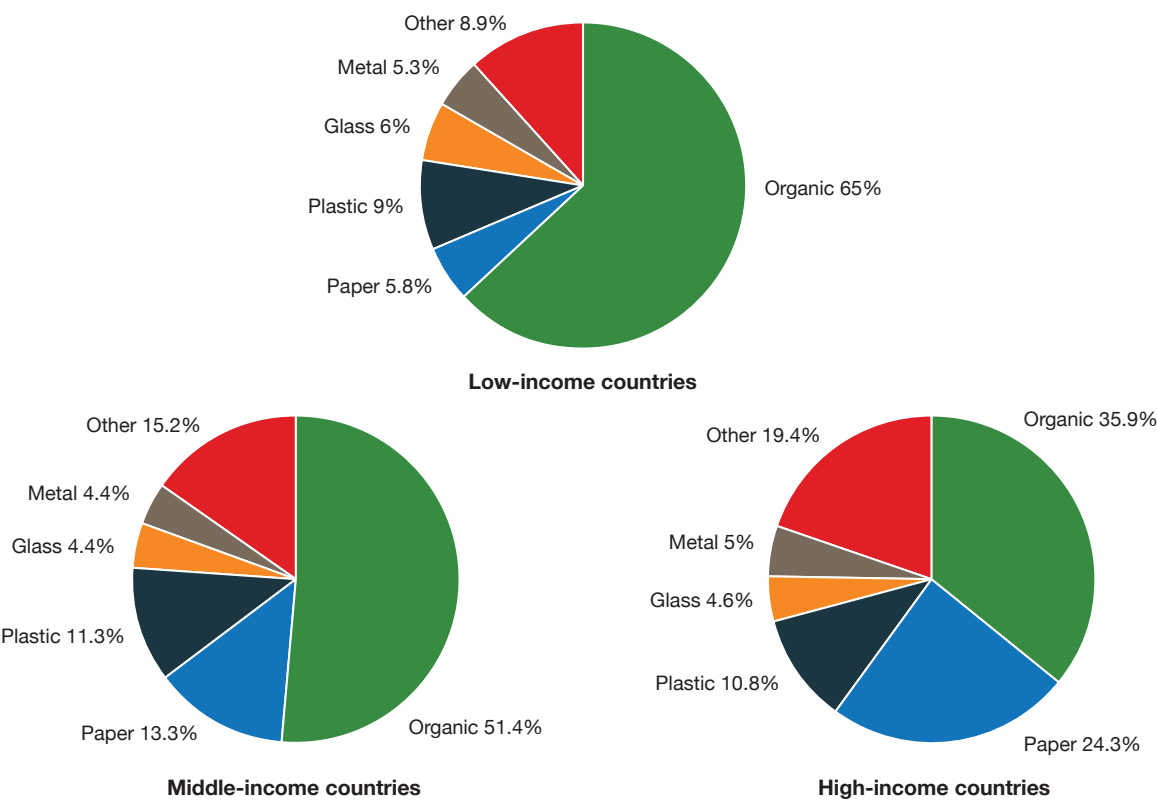
¹ United Nations, *World Urbanization Prospects: 2014 Revision* (Geneva, 2014).

² World Bank, *What a Waste: A Global Review of Solid Waste Management*, Urban Development Series Knowledge Papers (Washington, D.C., 2012).

1.3 The opportunity to turn waste into a resource

Although a formidable challenge, the Asian–Pacific waste crisis presents also a unique opportunity to create resources and usher in the needed paradigm change in waste management: Between 50 and 65 per cent of municipal solid waste in low- and middle-income countries is organic and can be turned into high-quality compost for use in agriculture, gardening or landscaping or made into biogas to produce heat and electricity (Figure 2). There are also significant opportunities for recycling the inorganic materials, such as glass, plastic and metal. Between 25 and 35 per cent of municipal solid waste is recyclable inorganic waste; this proportion will increase over the coming decades as countries further develop. With the appropriate paradigm shift, it is possible that up to 90 per cent of total municipal solid waste could be recovered, reducing the need for huge landfills and the use of raw materials.

Figure 2. The opportunity for organic and recyclable waste in municipal solid waste streams in the Asia-Pacific region



Source: World Bank, *What a Waste*.

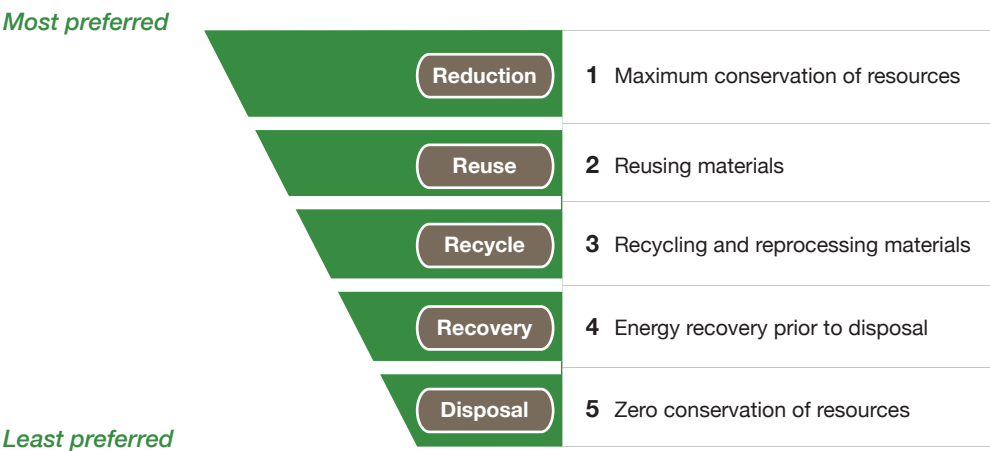
1.4 Recovering the value of waste

Seizing the opportunity to make substantive use of the recoverable material in municipal solid waste streams requires a change in how governments and the public perceive waste. Currently in the Asia and Pacific region, waste is viewed as a financial burden—and never seen as a benefit. The economic value of waste needs to be recognized, harnessed and exploited. Once the potential of waste is valued, how it is managed will inevitably change.

The change needed requires a huge shift in personal and organization behaviour. All societies must practise the ‘3R’ principles—reducing consumption and waste generation, reusing used products and materials and recycling waste (Figure 3). This requires more than just a change in practice; it is reliant upon changes in people’s mind set, which takes time and the extensive engagement of numerous stakeholders: households, communities, local and national governments and educators.

Much can be learned from the informal sector’s range of strategies for deriving value and income from waste. In many low- and middle-income towns and cities, informal networks of waste pickers and recyclers already collect and recycle 15–20 per cent of municipal waste. To move societies towards a 3R culture means engaging with the informal sector and recognizing its essential role in sustainable waste management. Expanding that role will create many benefits not only for the urban poor but for a city more generally in terms of environmental and economic benefits (see Section 3 on the benefits of waste-to-resource initiatives).

Figure 3. Moving waste management towards waste recovery



1.5 An affordable and practical model for waste recovery

Along with changes in perception and mind set, improving waste management requires tangible solutions. These solutions must be practical, affordable and easy to implement. Experience from around the region emphasizes that such solutions work best when they recognize, accommodate and build from existing limitations and opportunities at the local level, including waste composition characteristics and the human and financial constraints of local authorities.

A number of waste-to-resource solutions have been designed and tested in the region. Some of these have been large, centralized facilities based on foreign technologies and largely incompatible with local know-how, resources and behaviours. Many of these initiatives have failed. Smaller, decentralized and localized solutions also have been developed, and many of them have proven to be incredibly effective. One success story in particular is the integrated resource recovery centre model developed by Waste Concern and which the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) now promotes extensively across the region.

