



Global Waste Management Outlook

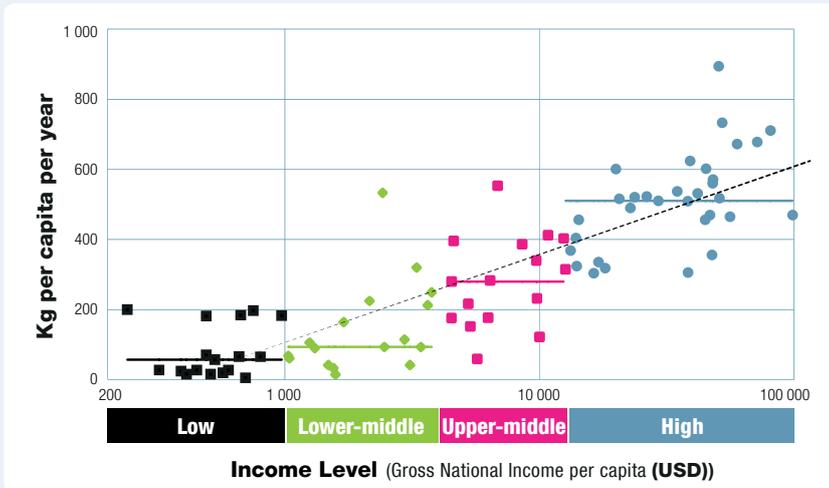
Summary for Decision-Makers



THE FACTS

The waste heap

Municipal solid waste per capita increases with income level



Note: Data for selected countries

Developing countries

- Population continues to grow
- Waste per capita is rising as economies develop
- Migration from rural to urban areas continues
- Number and size of cities increases

Developed countries

- Per capita rates doubled 1970-2000
- Rates stabilised since 2005
- 50% of total worldwide waste in 2012

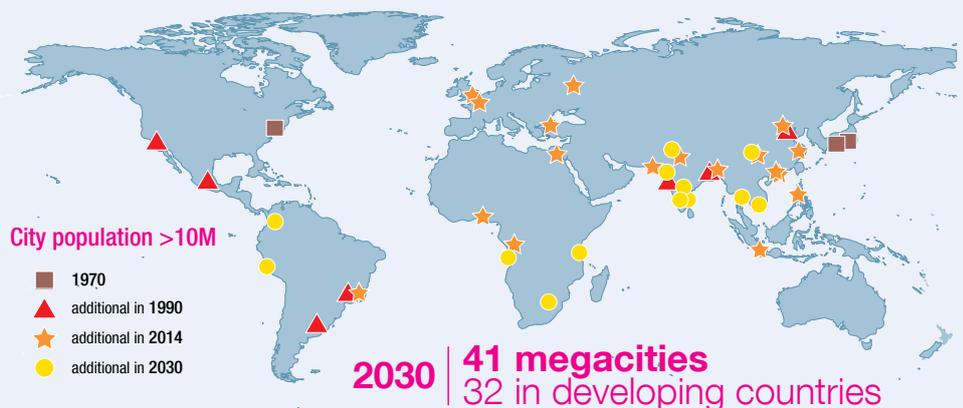
Globalisation results in industrial and hazardous waste generation shifting to developing countries

2 billion
tonnes per year
of municipal solid waste

7-10 billion tonnes
of 'urban' solid waste
from households, commerce,
industry and construction

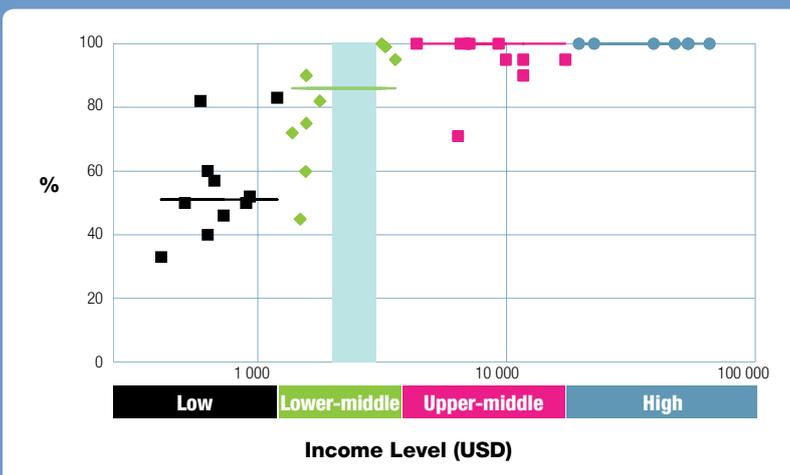
Worldwide quantities
increasing

Lower income cities
in Africa and Asia will double
their municipal solid waste
generation within 15-20 years



Solid waste management is an essential utility service

Waste collection coverage



Note: 2012 data for selected cities

Developing countries have made significant progress since the 1990s, when **average collection coverage was around 50%**

2 billion people
without access to
solid waste collection

Public health priority

Extending municipal solid waste collection to **100%** of the urban population

Costs and benefits of waste management

The costs of inaction

Public health impacts of uncollected waste

- Gastrointestinal and respiratory infections, particularly in children
- Blocked drains aggravate floods and spread infectious disease

Environmental impacts of open dumping and burning

- Severe land pollution and freshwater, groundwater and sea pollution
- Local air pollution and climate change



Costs to society exceed the financial costs per capita of proper waste management by a factor of 5-10

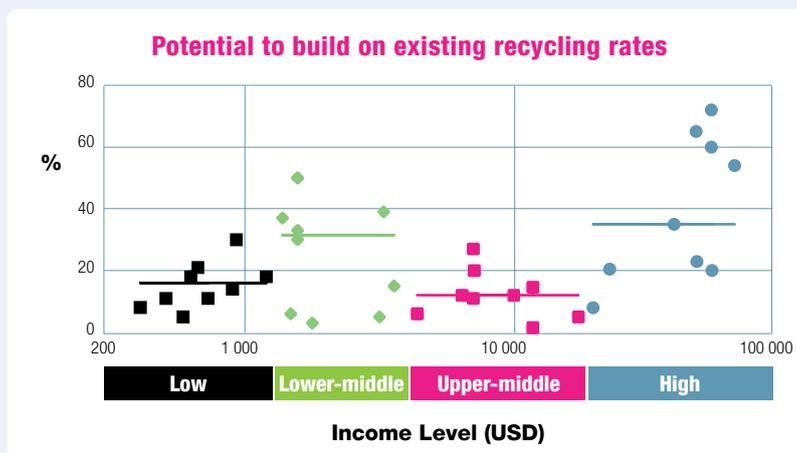
- Health care
- Lost productivity
- Flood damage
- Damage to businesses and tourism

Proper waste management makes economic sense but still has a financial cost

- Affordability is a major challenge in developing countries
- Even the poorest will pay something when they can see the benefits of a clean and healthy community
- Raising finance for investment in modern facilities continues to be a challenge in all countries

Opportunities to reduce waste management costs and investment needs

3Rs (reduce, reuse, recycle) cut the investment needed in sound treatment and disposal facilities



Note: 2012 data for selected cities

Waste reduction

- Making less that goes to waste saves business money on raw material, energy and labour costs
- Estimated savings to business worldwide: hundreds of \$ billion per year

Reuse and recycling

- Developing countries often achieve good rates through the informal sector
- Developed countries have rebuilt rates in the last 20-30 years



Developing countries have made significant progress since the 1990s, when **controlled disposal rates** were often 0%

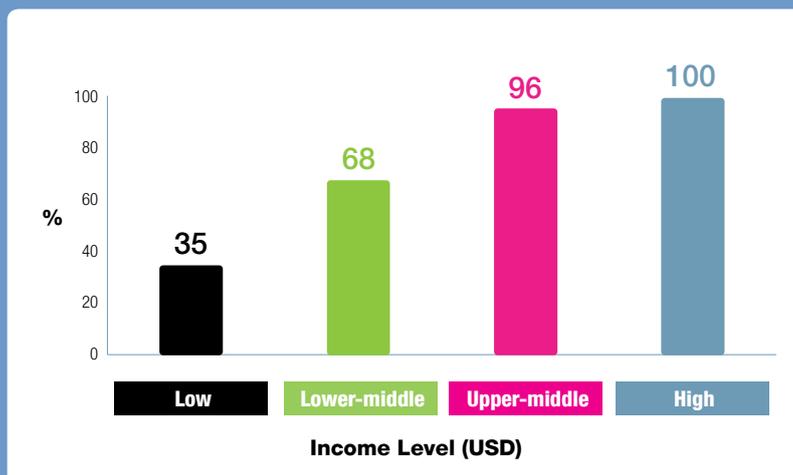
3 billion people

lack access to controlled waste disposal facilities

Environmental priority

Achieve **100%** controlled disposal
Eliminate open dumping and burning

Controlled disposal rate



Note: 2012 data for selected cities

Four groups of actions are to be taken, but not in sequential steps. One cannot afford to wait until one problem is 'solved' before beginning to address the next. However it is not possible to do everything and reach very high standards at once, particularly when resources are limited – the developed countries have evolved their current, sophisticated waste management systems via a series of intermediate steps over 30-50 years.

Bring wastes under control

Ensure access for all to basic waste services

Deal with the hazardous substances in wastes

Stop uncontrolled dumping and burning

- Extend affordable collection services to all in society, irrespective of income level
- Ensure the controlled disposal of all waste as a necessary first step towards environmental protection

Bring hazardous wastes under control

- Separate hazardous waste, and in particular hazardous healthcare waste, from other waste at source
- Manage them separately in environmentally sound facilities
- Need a holistic approach to managing all residuals, as pollution controls concentrate contaminants from air emissions and wastewater into (often hazardous) waste

Focus on waste prevention

- Reducing waste improves resource security, improves well-being and saves everyone money
- Design out waste and hazardous waste
- Maximize repair, reuse and remanufacture
- Keep materials separate/segregate waste at source to minimize contamination and facilitate reuse and recycling

Focus on the 'feedback loops'

- Maximize recycling
- In low-income countries, integrate existing small-scale entrepreneurial recycling within mainstream waste management
- Develop environmentally sound energy recovery facilities and landfills for residual waste that cannot be sustainably recycled

Tackle the problem at the source

Close a clean material cycle

Move from a linear to a circular economy

The next appropriate actions will vary depending on the local situation and the current baseline

How to do it?

A major focus of the GWMO is on the 'governance' factors required to make waste management happen in practice. A 'toolkit' has been developed to help select a suitable set of actions. The aim is to facilitate taking the next appropriate steps in developing (your own) specific waste management system at the national or local level.

Embed within working practices monitoring and evaluation, measuring progress, learning from experience, knowing what works, drawing lessons and accumulating local knowledge

Responsibilities and partnerships

- Ensure **equal access** for all to affordable services
- Work together to establish **clear strategic goals** through public participation
- Secure **political commitment** to those goals – safeguard continuity beyond political terms of office
- Ensure **waste generators know what is required** of them – facilitate required changes in behaviour
- Establish **mutually beneficial partnerships** to deliver effective and sustainable services
- **Include the community and informal sectors** within an integrated system in the city

Proactive policies and sound institutions

- A **basket of policy instruments**, including direct legislation, economic and social instruments
- A **national waste framework law** in place and enforced
- Each government body knows its responsibilities and duties – **gaps and overlaps are avoided**
- A well-resourced **Waste Department**, with the appropriate level of authority and autonomy
- A well-resourced **environmental regulator**, with sufficient authority to enforce regulations in a consistent and effective manner
- An agreed, long-term **waste and resource management strategy**, to provide a long-term, stable framework for investment in infrastructure

Money matters

- **Know your costs** and the revenues available
- Someone has to pay. Find the appropriate financing model and sources of funding for investment. There is **no 'right' or 'wrong' answer** – each local situation is different
- **Larger waste generators should pay** the economic cost of sound management of their own waste
- **Ensure disposal is priced**: provides an incentive for the 3Rs
- Aim to **increase cost recovery gradually** – support those who cannot afford to pay
- Consider **transferring (some) costs of managing end-of-life products** from the municipality to the 'producer'

Select tailor-made financing and governance models which are transparent, suit the local custom and tradition and support the service that fits customers' needs

Data revolution

- Urgently improve the **availability and reliability** of waste and resource management **data**
- Take advantage of investment in new services and facilities to **institute routine collection of data**
- **Build reliable databases** on waste and resource management
- **Benchmark performance** of your city's municipal solid waste management system using available indicators and highlight areas for improvement
- **Be transparent** – make waste generation and monitoring data available online

CALL FOR ACTION

Sustainability

Waste management has strong linkages to a range of other global challenges: health, climate change, poverty reduction, food and resource security, sustainable production and consumption. The political case for action can be significantly strengthened when waste management is viewed as an entry point to address a range of sustainable development issues, many of which are difficult to tackle.



Climate change

Potential impact of improved waste management on reducing GHG emissions across the economy: 15-20%

Prevention of the **1.3 billion tonnes of food waste generated per annum** enough to feed all the undernourished people in the world twice over, could save **9% of total worldwide GHG emissions**



Diversion from disposal of biodegradable wastes prevents emissions of methane, a powerful greenhouse gas (GHG)

Reduction, reuse and recycling all displace virgin materials and products, and the GHG emissions in their manufacture

A clean city

- Where the solid waste management service works well
- A holistic approach is taken to managing all residuals



A successful city

- A healthy, pleasant and safe place to live
- A good place to do business and visit as a tourist
- Fosters a sense of community and belonging

Good governance

- The cleanliness of the city can be used as a proxy indicator of good governance



Enterprise and creating sustainable livelihoods

'Waste to wealth' projects in Africa have demonstrated that new waste services can be used as a **catalyst for sustainable livelihoods and economic development** in poor neighbourhoods of some of the world's poorest cities

2000-2010 in Europe **employment in waste and resource management doubled: > 2 million**

15-20 million people working in the small-scale entrepreneurial 'informal' waste sector worldwide

Estimate of worldwide potential for new jobs in the circular economy: 9 to 25 million

Priority action

Waste management is a global as well as a national and a local issue.

Addressing waste management as a global priority will facilitate meeting the Post-2015 Development Agenda. The Global Waste Management Goals are already explicit or implicit within the Sustainable Development Goals (SDGs).

GLOBAL WASTE MANAGEMENT GOALS		RELATED SDGs	
Ensure by 2020	W.1 Access for all to adequate, safe and affordable solid waste collection services	3 – Health for all	11 – Safe cities
	W.2 Stop uncontrolled dumping, open burning	3 – Health for all 11 – Safe cities 12 – Sustainable consumption and production (SCP)	6 – Clean water and sanitation 14 – Marine resources 15 – Terrestrial ecosystems
Ensure by 2030	W.3 Achieve sustainable and environmentally sound management of all waste, particularly hazardous waste	12.4 – Managing all waste 13 – Climate change	7 – Access to energy
	W.4 Substantially reduce waste generation through prevention and the 3Rs (reduce, reuse, recycle) and thereby create green jobs	12.5 – The 3Rs 8 – Growth & employment	1 – End poverty 9 – Sustainable industry
	W.5 Halve per capita global food waste at the retail and consumer levels and reduce food losses in the supply chain	12.3 – Food waste	2 – End hunger; food security

A GLOBAL CALL TO ACTION

Focus on developing countries

- Mobilize international aid and environmental and climate funds to assist the poorest countries. Increase the level of funding on waste management by a factor of 10, from the 0.3% achieved since 2000 to an average of 3% of total international aid funding in the period from 2015 to 2030.
- As an initial step, aim to:
 - achieve 100% collection coverage in all cities with a population more than 1 million,
 - eliminate open burning of municipal solid wastes and similar wastes, and
 - close large open dumps, replacing them with controlled disposal facilities.
- Develop a holistic approach to managing all residuals. In particular develop the integration of sanitation and solid waste management services.
- Build on existing recycling systems while eliminating hazardous resource recovery practices as a means to achieve sustainable livelihoods and reduce costs for the cities.
- Manage hazardous wastes safely. Enforce, and adequately finance domestic enforcement of, the Basel Convention and ensure that sound facilities are available within developing countries for their own wastes.
- Promote producer responsibility programmes to ensure that international companies take more responsibility for waste management associated with their products and wastes in developing countries.
- Establish/strengthen wide-reaching capacity development programmes for administrative, technical and business sectors. Involve developed country cities through twinning and promote collaboration.

Focus on all countries

All countries still have some way to go to meet the 2030 goals:

- Improve access to financing for sound waste management facilities and operations.
- Reduce waste at source, engage citizens, industries and other stakeholders – move from linear waste management to the circular economy.
- Improve substantially the availability and reliability of waste and resource management data – if you don't measure it, you can't manage it.



Global Waste Management Outlook (GWMO)

Waste management is a key utility service and a critical element of the infrastructure underpinning society, but it is often not recognized as such. This Global Waste Management Outlook (GWMO) has been prepared as a follow-up to the Rio+20 summit and as a response to UNEP Governing Council decision GC 27/12:

‘to develop a global outlook of challenges, trends and policies in relation to waste prevention, minimization and management [...] to provide guidance for national policy planning’.

The GWMO is the result of two years’ work (by UNEP and ISWA) and provides an important and timely status report and call for action to the international community. The costs of inaction – the public health and environmental damage costs of uncontrolled disposal and open burning – are far in excess of the costs of sound waste management. Significant progress has been made over recent decades, but 2 to 3 billion people, often in the least developed countries, still lack access to regular waste collection and/or controlled disposal services for municipal solid waste. This is a global public health priority requiring a coordinated approach, rather than just a national or local problem. Developed countries have also made good progress in increasing recycling rates and stabilizing waste growth – but there is still much to be done across the world in making the transition from ‘end-of-pipe’ waste management in a linear economy, to integrated and sustainable resource and waste management in a circular economy.

The technologies required to overcome the challenge of providing sound waste management are largely already available, and have been much written about. The GWMO has chosen rather to focus primarily on the ‘governance’ issues which need to be addressed to establish a sustainable solution – including the regulatory and other policy instruments, the partnerships and, crucially, the financing arrangements – and to provide a ‘toolkit’ to be used in developing a solution appropriate to the local situation. The text is accompanied by 15 Topic Sheets addressing specific issues and 70 illustrative cases, including eight in-depth case studies.

The full GWMO report can be accessed at:

<http://www.unep.org/ietc/OurWork/WasteManagement/GWMO>

Acknowledgements:

Editor-in-Chief: David C. Wilson

Authors: David C. Wilson, Ljiljana Rodic, Prasad Modak, Reka Soos, Ainhua Carpintero, Costas Velis, Mona Iyer, Otto Simonett

Project Coordinators: Ainhua Carpintero, Kata Tisza and Rachael Williams Gaul

Supervisors: Surendra Shrestha, Surya Chandak, David Newman, Hermann Koller

Cover illustration: High Moon

Design and layout: UNESCO

International Environmental Technology Centre (IETC)
Division of Industry, Technology and Economics, UNEP
2-110, Ryokuchi koen, Tsurumi-ku, Osaka, 538-0036, Japan
Tel: +81 6 6915 4581 Fax: +81 6 6915 0304
E-mail: ietc@unep.org Web: www.unep.org/ietc

International Solid Waste Association (ISWA)
General Secretariat
Auerspergstrasse 15/41, 1080 Vienna, Austria
Tel: +43 1 2536 001 Fax: +43 1 253 600199
E-mail: iswa@iswa.org Web: www.iswa.org