



Clean cities for everyone – moving to a zero carbon and waste world

Solid waste management is central both in terms of the challenges associated with the climate crisis and the solutions. If waste is mismanaged, the whole sector becomes a net-emitter of greenhouse gas emissions. However, if properly managed and steps are taken towards a circular economy, the sector can make a huge contribution towards mitigating greenhouse gas (GHG) emissions from cities.

This holds also true for COVID-19: while the world focuses on washing hands, solid waste collection and treatment needs to continue in a safe way to avoid the spread of other diseases and ensure proper disposal of increased amounts of medical waste and potentially infectious waste from municipal solid waste stream.

According to the newly released **Report** by the Intergovernmental Panel on Climate Change (IPCC), emissions of methane have made a huge contribution to current warming, accounting for 30-50 per cent of the current rise in temperature.¹ As waste management, together with fossil fuel production and distribution and agriculture, is a major emitter of methane, it is one of the sectors contributing largely to short-term global warming (10-20 years)². The report highlights that the global emissions from waste management, including landfills, have been increasing steadily since the 1970s, despite significant declines in the USA, western Europe and Japan.

The solid waste management sector contributes to GHG emission and therefore to climate change in a number of areas:

- Open dumpsites, especially through decomposition of organic waste, increase methane emission; dumpsites receive roughly 40 per cent of the world's waste produced by 3-4 billion people. In a business-as-usual scenario, dumpsites will generate 8-10 per cent of manmade GHG by 2025³, contributing to climate change.
- Open burning of waste generates GHGs and toxic fumes, harmful both for human beings and the environment;
- Low recovery rates lead to high energy consumption and emissions of carbon dioxide and other pollutants, to extract, transport, and process raw materials for product manufacturing;

¹ Climate change: Curbing methane emissions will 'buy us time', BBC available at <https://www.bbc.com/news/science-environment-58174111>

² Climate Change 2021 The Physical Science Basis, IPCC, available at <https://www.ipcc.ch/report/ar6/wg1/>

³ A roadmap for closing waste dumpsite, ISWA 2016

- Plastic waste produces GHG emissions during every stage of its lifecycle: 4-8 per cent of annual global oil consumption is associated with plastics, and processes from extraction to transportation and disposal depend on oil, gas, and coal that release carbon emissions.

The waste sector is in a unique position to move from being a source of global greenhouse gas emissions to becoming a net-zero emitter and even contributing to climate change mitigation. Sound waste practices include avoiding GHG emissions from dumping and landfilling, decreased use of natural resources, resource and energy recovery as well as carbon sequestration through compost application. There is a general consensus that the climate benefits of waste avoidance and recycling far surpass the benefits from waste treatment technologies, even in the case energy is recovered⁴. The informal waste sector, overlooked and underrecognized in most countries, contributes to reducing GHG emissions through activities such as preventing materials from decomposing in dumpsites, using recycled material instead of raw material and collecting and sorting materials manually instead of using more energy-intensive technology⁵.

The current focus should be on moving from a waste management approach to a circular economy one where products are designed to go back into the life cycles of other products and minimal amounts of waste are generated. A zero-waste lifestyle is the first step towards clean and carbon free cities that will allow us to reach the climate goals set by the Paris Agreement and the Sustainable Development Goals.

This roundtable during World Habitat Day 2021 will discuss the key aspects of solid waste management in accelerating urban actions for moving towards a circular economy and carbon-free cities, while making sure no-one and no-place is left behind, also considering the COVID-19 recovery context. The need to develop a sustainable solid waste management system based on data and an inclusive, participatory planning process, as promoted by the Waste Wise Cities programme, will be highlighted. This discussion will be rooted in the New Urban Agenda and Sustainable Development Goals 1 on poverty, 6 on clean water and sanitation, 11 on sustainable cities, 12 on responsible consumption and production, 13 on climate action, and 14 on aquatic life.

⁴ Waste and Climate Change – Global trends and strategy framework, UNEP 2010, available at <https://wedocs.unep.org/bitstream/handle/20.500.11822/8648/Waste&ClimateChange.pdf?sequence=3>

⁵ Reducing Greenhouse Gas Emissions through Inclusive Recycling Methodology and Calculator Tool, WIEGO, available at <https://www.wiego.org/sites/default/files/resources/file/COP%20GHG%20Methodology%20English%20for%20web.pdf>