

In many Southeast Asian countries, waste management systems are underdeveloped with the informal waste sector dominating the processes of waste collection, sorting and recycling. Open dumping and open burning of waste is prevalent in most ASEAN countries. The composting and anaerobic digestion of organic waste and recovery of valuable recyclables such as plastic, metal, and paper are also common in ASEAN. Recycling, however, is at the hands of the informal sector and not funded or supported by governments. Waste management and recycling are pressing environmental issues and the jobs performed by the informal sector are crucial to ensure a steady flow of waste for recycling and reuse. Without the informal economy, there would be no waste recycling in most Asian cities.

Informal waste collectors sort valuable waste from houses, streets, and public spaces, and landfills and sell them to small and medium-sized waste dealers or junk shops. Junk shops or middlemen then aggregate and sell the recyclables sorted by grade and type to recycling companies. They work outside of the municipal waste management system as they play a key role in labor, waste and the circular economy in waste collection and segregation. Yet, as they belong to some of the most vulnerable and poor segments of the population, they often operate under hazardous and challenging work conditions, receiving little social support. Another major challenge to their work is only 8% of people report segregating their waste at home, making it extremely difficult for them to collect and sort recyclables.

To solve for our waste challenge, let's investigate the current issues to achieving more large-scale recycling practices at the household level, and seek to identify opportunities for ensuring that informal waste workers can benefit from innovations in waste management and help to achieve both:

- a) circularity in the management of waste products to maximise recycling rates, and
- b) more sustainable, inclusive, and safe working conditions to maximise collection and sorting efficiency.

Your solution will be examined through the following four sub-questions:

1. How does individual consumption and behaviour influence patterns of waste generation?
2. How do informal waste workers currently operate as collectors of recyclable waste?
3. What are the current barriers to a transition towards a more inclusive solid waste management sector?
4. What behavioural or technological changes are required to achieve the circular economy?

Key actors

1. Informal waste workers operating in ASEAN (urban areas)
2. Local communities (households, hotels, businesses, etc.) generating waste, including recyclable waste
3. Middlemen or junk shop traders buying recyclable waste materials from waste workers
4. New technology available to improve the recycling value chain
5. Businesses that purchase and use the raw material from recycling