



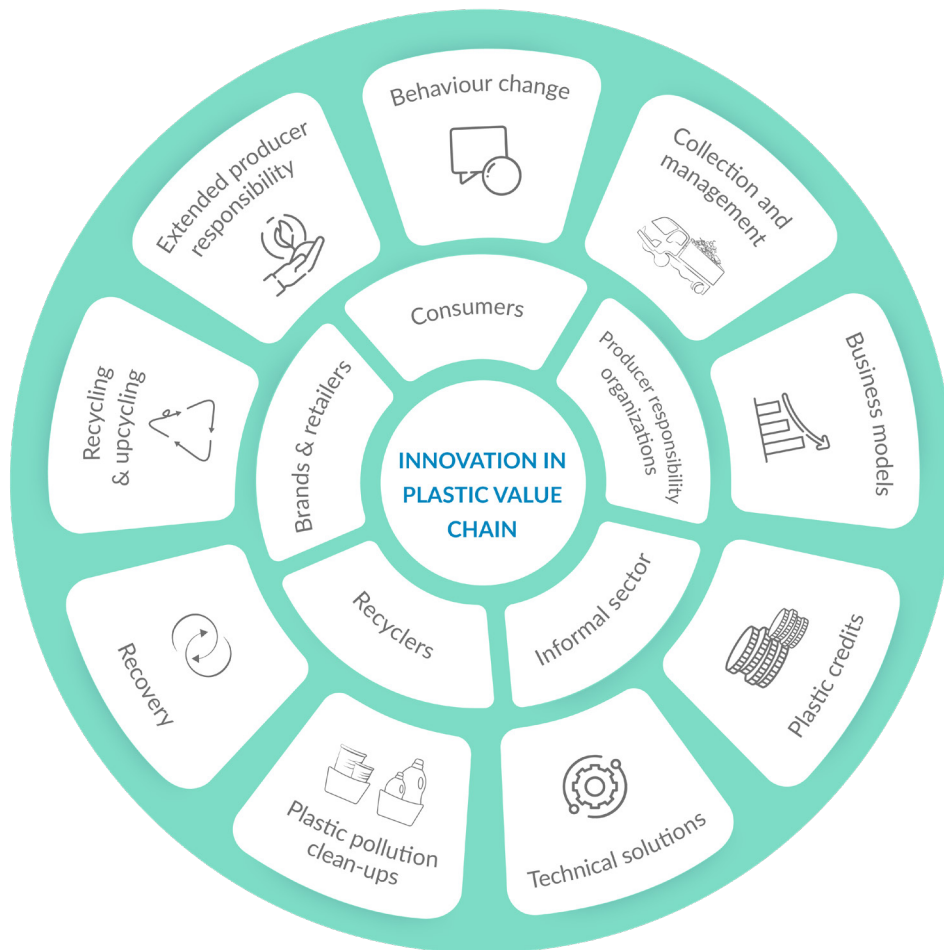
Circular solutions for plastic pollution

Fostering collaboration for
upcycling and circularity in the Philippines

About the case study

This good practice case study is part of a series of knowledge products developed by the SEA circular project to showcase exemplary market-based solutions that bring about transformational changes in the way plastic is managed in the value chain. This series captures circular economy approaches, ranging from innovative business models to behaviour change initiatives, to address plastic pollution. These approaches form part of the SEA circular project's "circularity framework for the plastic value chain".

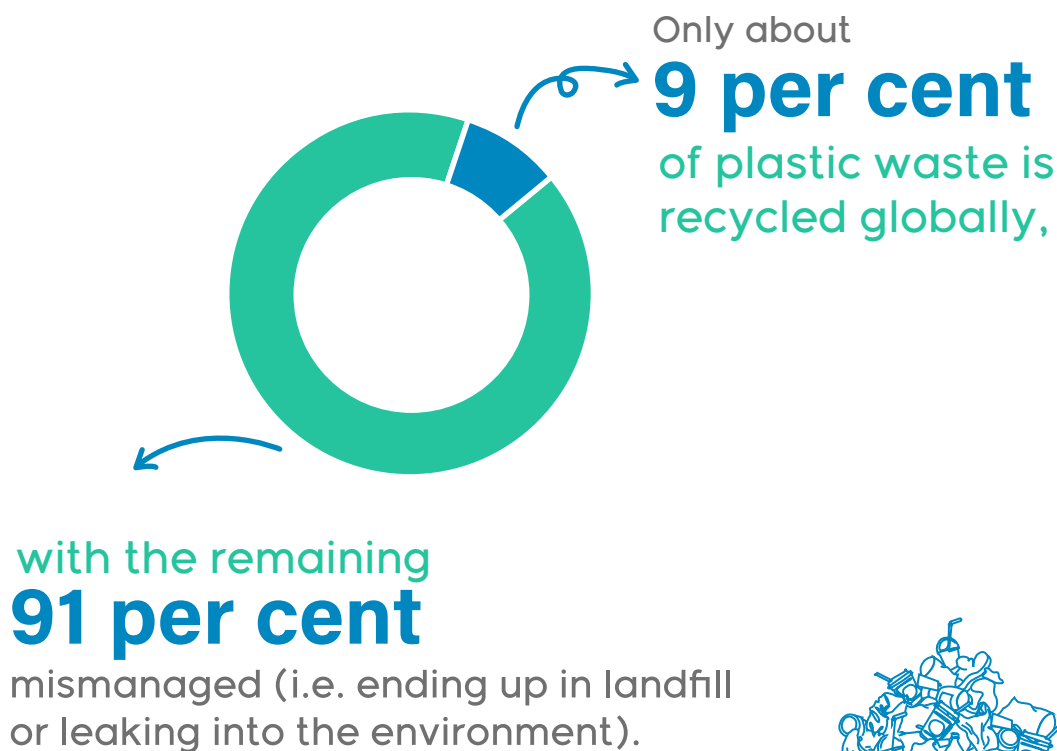
Circularity framework – plastic value chain



Background

Plastic is extremely prevalent as it has a wide range of applications, from industrial to personal. Small single-use plastic packaging for food and other products is common in low- and middle-income countries. Only about 9 per cent of plastic waste is recycled globally,¹ with the remaining 91 per cent mismanaged (i.e. ending up in landfill or leaking into the environment).

The Philippines is the third largest contributor of plastic pollution, with an estimated 0.75 million metric tons of its mismanaged plastic entering the ocean every year.² The widespread use of plastic packaging in the country earns it the title 'sachet economy'. Approximately 164 million sachets are used daily, meaning 59.7 billion sachets are generated annually in the Philippines.³ Plastic mismanagement is also attributed to the limited recycling infrastructure available to support the ever-increasing plastic waste in the country.



1. Organisation for Economic Co-operation and Development, "Plastic pollution is growing relentlessly as waste management and recycling fall short, says OECD", 22 February 2022. Available at www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm.

2. World Bank Group, *Market Study for the Philippines: Plastics Circularity Opportunities and Barriers* (Washington, D.C., 2021). Available at <https://openknowledge.worldbank.org/handle/10986/35295>.

3. GAIA, "Plastics exposed: how waste assessments and brand audits are helping Philippine cities fight plastic pollution". Available at www.no-burn.org/plastics-exposed-how-waste-assessments-and-brand-audits-are-helping-philippine-cities-fight-plastic-pollution/. (Accessed 22 December 2022.)

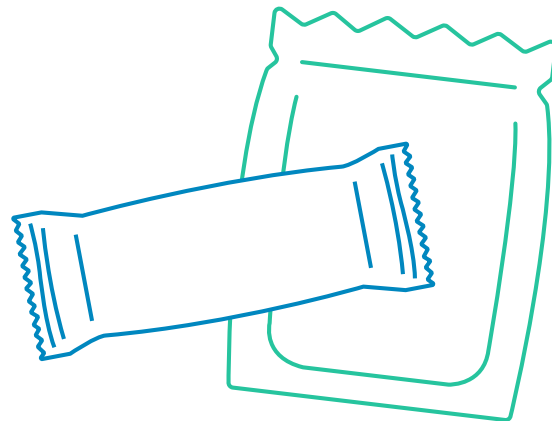


The Philippine Government drafted a solid waste management law – The Ecological Solid Waste Management Act of 2000 (Republic Act (RA) 9003). Part of the legislation concerns ways to address solid waste management through recycling and the development of national road maps. Local government units are also mandated to facilitate and operate materials recovery facilities. This legislation was amended by the Extended Producer Responsibility Act (EPRA) of 2022,⁴ which institutionalizes the extended producer responsibility on plastic packaging waste. The law requires companies to implement and adopt policies for the proper management of such waste.

The government is also working to increase the private sector's involvement in recycling technologies. Having different stakeholders participate in and collaborate on recycling processes can help scale them up and address the plastic waste problem in the country.

As a local recycling company in the Philippines, Envirotech aims to foster circularity by promoting partnerships with local government units, local communities and private companies over its capability to produce products from low-value plastic waste (single-use plastic).

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4. Republic of the Philippines, Republic Act (RA) No. 11898. Approved 23 July 2021.
Available at http://legacy.senate.gov.ph/republic_acts/ra%2011898.pdf.



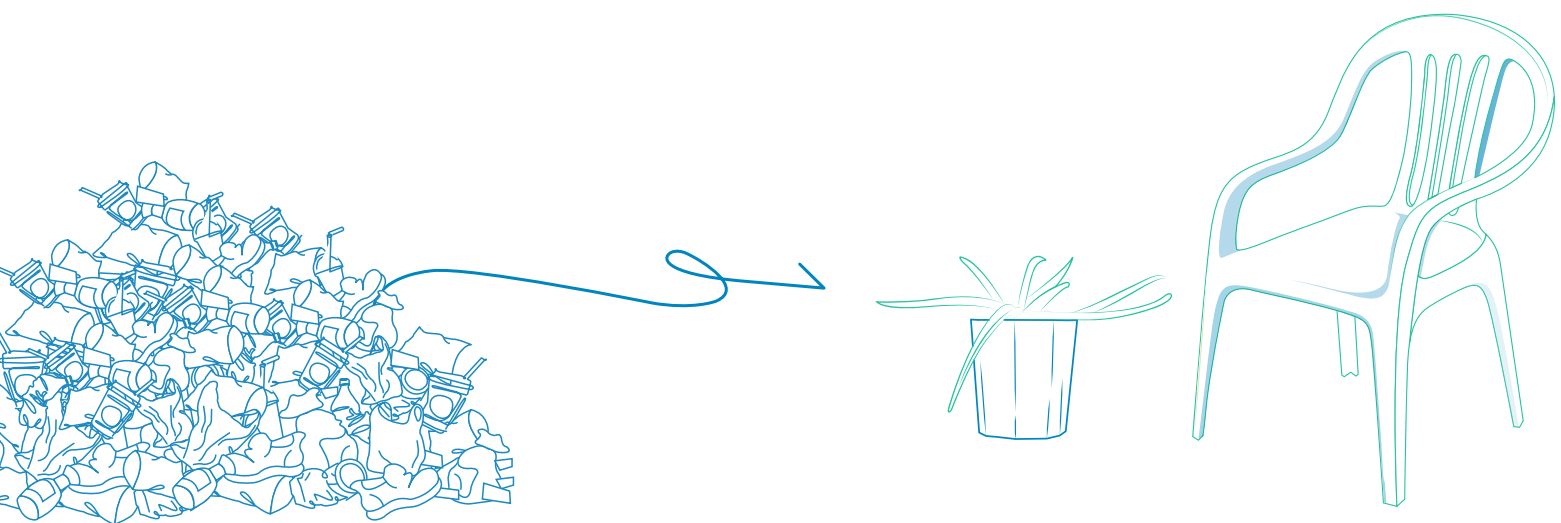
Intervention

Based in Davao City, Envirotech is a leading waste management solution provider committed to the environment and addressing the global problem of plastic waste by recycling and turning it into useful and beneficial products. Envirotech handles waste collection, sorting and processing, and plastic recycling; the company accepts recyclable plastics (mainly single-use or low-value plastic waste from local communities and private organizations) and converts them into furniture, construction materials, household essentials and other products. Envirotech is also able to customize products for its clients. For example, in 2020, the company started to create construction materials and offer them to developers and contractors.

Envirotech's mission is to help solve the plastic waste problem in the Philippines. To do so, the company fosters collaboration and partnership with different sectors along the supply chain.

A diagram of the EWRI End-to-End Processing System is presented below:

The company accepts recyclable plastics and **converts them into furniture, construction materials, household essentials and other products.**



An important part of the business intervention is bridging the efforts and activities of local governments and private companies on low-value plastic waste. In the Philippines, local government units collect all waste types at the household level. Recycling is not mandatory and there is neither a penalty for non-compliance nor an incentive for compliance. This has discouraged recycling at the household level, especially of low-value plastic waste.

On the other hand, some private companies provide incentives for consumers to recycle plastic, especially low-value plastic waste, in exchange for cash or products. Fast-moving consumer goods companies, for example, exchange plastic waste of their products for an equivalent value of the goods they produce (e.g. empty laundry detergent packets for new laundry detergent, empty milk plastic containers for fresh milk).

Envirotech has helped link these companies to work with the local government to collect low-value plastic waste in communities. A barangay⁵ conducts information drives at the household level to support the segregation and collection of plastic waste. In return, the plastic waste collected is sent to Envirotech to be converted into products with another use.

Part of Envirotech's objective as a company is to continuously educate its clients and communities on plastic recycling and the importance of recovery at the household and community levels, in order to address the gap in recovery at these levels.

Envirotech started offering school chairs to public schools in 2010, introducing the idea to the local government units and to multinational companies as part of the company's corporate social responsibility programme. While providing students with a more suitable environment for learning through safe and sturdy furniture, this initiative was sustainable as it addressed the problem of single-use plastic waste. Envirotech not only solved the problem of the lack of school chairs in the Philippines, but also helped people recognize the material value associated with plastic waste.



5. A small territorial and administrative district forming the most local level of government in the Philippines.



Challenges encountered

While working to support a circular economy model, the company observed challenges in implementation across the plastic value chain.

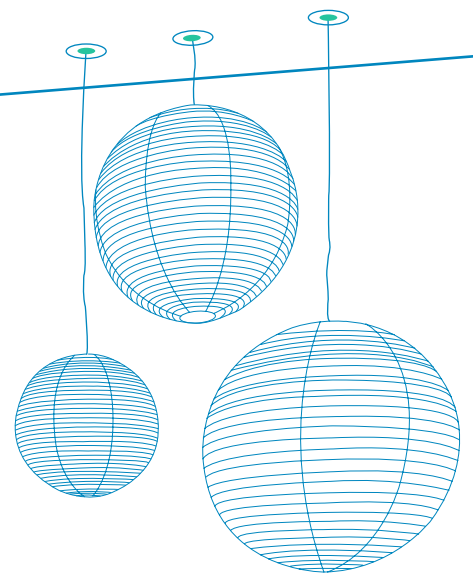
Awareness, education and discipline. Awareness, education and discipline of individuals and communities towards single-use plastic are particularly challenging issues. Sorting at source or even at a community level is a major challenge in plastic waste management. Individuals, households, communities, establishments and other facilities should learn about how plastic waste can be used and transformed into useful items. Students, for example, are shown that the sweet wrappers they throw away can be processed into chairs.

Lack of drop-off facilities. The availability of drop-off facilities can support the recovery of recyclable plastic materials. In certain areas of the country, a functioning facility is not available. Increasing the availability of these facilities could increase plastic recovery.

Government support. The government plays an important role in ensuring plastic waste management within communities. Envirotech is working with the government to ensure that recyclable plastic waste is recovered and sent to the drop-off facilities.

Incentives for communities to recycle. There is a lack of adoption of plastic waste collection in certain communities. It was observed that, with incentives, this could improve considerably.

Individuals, households, communities, establishments and other facilities should learn about how **plastic waste can be used and transformed into useful items.**



Results and impact

Envirotech collects a total of 60–90 tons of plastic per month. The company was able to collect and process around 2,500 tons of plastic waste in 2021 from five plants located across the Luzon and Mindanao islands: Davao City, Claver in Surigao del Norte, Zambales, Nueva Ecija and Koronadal City.

A school armchair alone requires 20–30 kg of plastic. For a standard classroom in the Philippines of around 45 chairs,⁶ a total of 1,350 kg plastic is therefore needed. Not only does this help manage plastic waste, but it also helps companies meet their corporate social responsibility goals, secures the social support of government partners and aids public schools nationwide.

In addition, Envirotech is pursuing a housing project that requires 3,000 kg of plastic waste for a single unit of 28 square metres. This project helps reduce plastic waste while supporting affordable housing units in the country.

These initiatives have a huge impact in a community in terms of plastic circularity and support for social services.

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6. Republic of the Philippines, Department of Education. "Guidelines on the implementation of the school furniture program under the DPWH-implemented regular school building program", 20 December 2011.

Available at www.deped.gov.ph/2011/12/20/do-100-s-2011-guidelines-on-the-implementation-of-the-school-furniture-program-under-the-dpwh-implemented-regular-school-building-program/.



Lessons learned

In its years of business, Envirotech has observed that an incentive model is critical to encourage individuals, communities, companies and governments to continuously segregate and collect plastic waste that can be recycled. Incentive programmes can improve waste management and accelerate the recovery and recycling processes.

The company has also observed that private and public stakeholders working together can make recycling far more effective. Private companies' projects are important since they are the ones that usually have the capacity to provide incentive schemes. The government is equally important: through the barangay, more households can be educated and encouraged to recycle.

Raising awareness among communities to be part of the solution and not the problem is key to recovering single-use plastics. Involving communities in advocacy efforts can therefore help improve plastic recycling.

Envirotech is committed to continuing to produce products from low-value plastic waste and, most importantly, provide support to different stakeholders in terms of plastic waste management and improving social welfare and development.

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Way forward

Envirotech considers that it is important to understand how single-use plastic is recovered. This must be done by all involved stakeholders, rather than a single entity. Fast-moving consumer goods companies, for example, have taken the lead in pursuing the retrieval of plastic waste at a higher rate due to the extended producer responsibility law in the country. Companies can continue to partner with organizations such as Envirotech and the local government to identify the needs of the community (e.g. school chairs for public schools, furniture for public establishments, materials for housing projects).

Envirotech is continuously developing new ways to process plastic waste into new products to complement the changing market and also the change in plastic types.

Another avenue for Envirotech is to continue to support activities that will assist in data collection which would assist the implementation of mechanisms such as plastic credits and plastic disclosure by organizations.



We thank Envirotech for sharing details of their exemplary innovations in the SEA circular project's series on the plastic value chain.



The SEA circular project Reducing marine litter by addressing the management of the plastic value chain in Southeast Asia is implemented by the UNEP Regional Office for Asia and the Pacific and the Coordinating Body on the Seas of East Asia (COBSEA), with funding support from the Government of Sweden. SEA circular aims to reduce and prevent plastic pollution and its impact by working with governments, businesses, civil society, academia and international partners. The initiative promotes market-based solutions and enabling policies to transform plastic value-chain management, strengthens the science base for informed decision making, creates outreach and raises awareness. The project leverages COBSEA's regional mechanism to tackle the transboundary challenge of marine litter in a harmonized manner.

 www.sea-circular.org

