



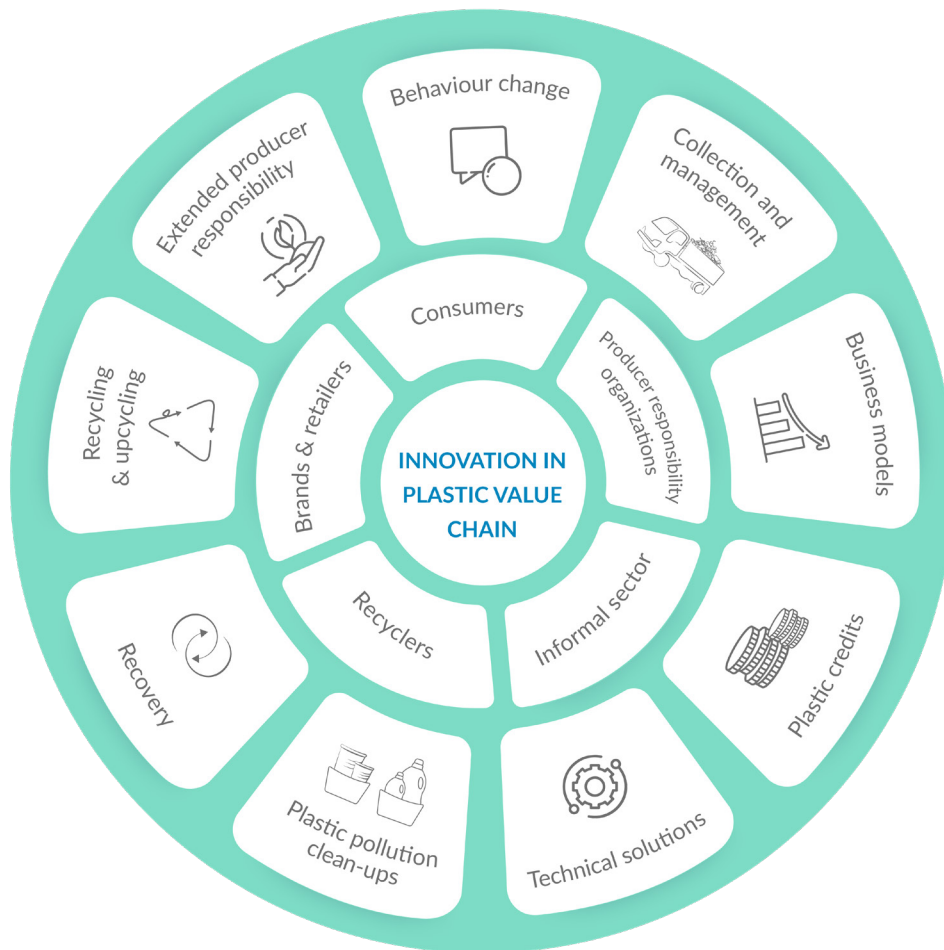
Circular solutions for plastic pollution

Technology-enabled reusable packaging

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



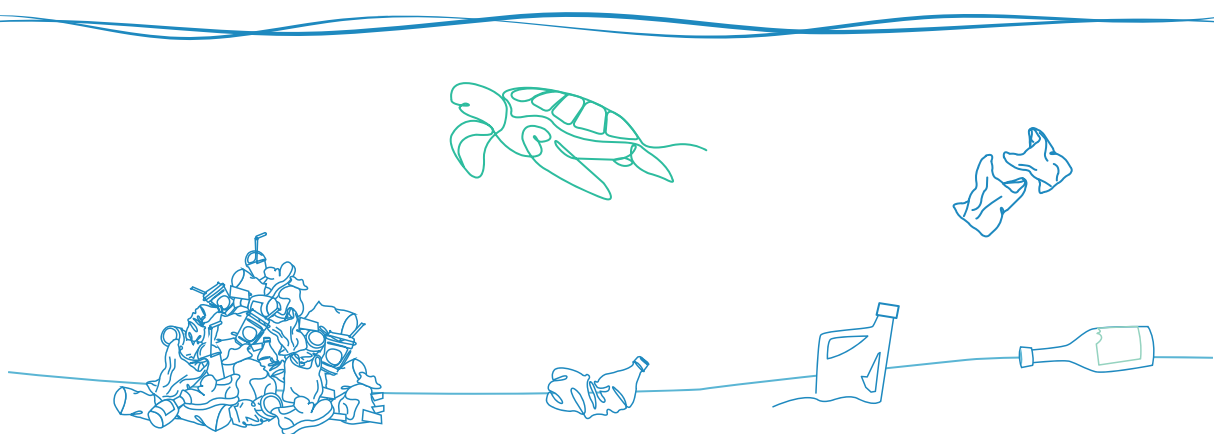
Background

Of the 8 million tons of plastics that enter the oceans every year, 600,000 tons are estimated to come from Indonesia.¹ This is partly down to the country's widespread usage and disposal of single-use plastic.² It is estimated that marine plastic pollution contributes to a direct cost of over USD 459 million to Indonesia's tourism, shipping, aquaculture and fishing industries.³

Dubbed a "sachet economy" alongside its neighbours such as the Philippines, and with similar topography and socioeconomic conditions, the country's oceans are saturated with these uncollectable, unrecyclable, contaminated and valueless little packets. Designed to help keep products fresh, the sachets are made up of a complex multilayer of polymers, aluminium and films, making them near impossible to recycle. Despite some grass-roots initiatives, the bulk of the sachet waste is dumped in overflowing landfills, sent to incineration, or left to contaminate waterways, shorelines and oceans.

To address this problem, sachets need to be removed from the packaging system. Koinpack offers a reusable and returnable packaging solution based on a deposit and reward model for consumer goods to replace disposable sachets. Koinpack's reuse system aims to shift the traditional linear business model to a circular business model and prevents single-use plastic at the source.

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1. D.A.A. Sari and others, "Reduce marine debris policy in Indonesia", *IOP Conference Series: Earth and Environmental Science*, vol. 724, No. 1 (April 2021).

2. Beatriz Garcia, Mandy Meng Fang and Jolene Lin, "Marine Plastic Pollution in Asia: All Hands on Deck!", *Chinese Journal of Environmental Law*, vol. 3, No. 1 (August 2019).

3. Organisation for Economic Co-operation and Development, *Marine Plastics Pollution: Indonesia* (2022). Available at www.oecd.org/ocean/topics/ocean-pollution/marine-plastics-pollution-Indonesia.pdf.



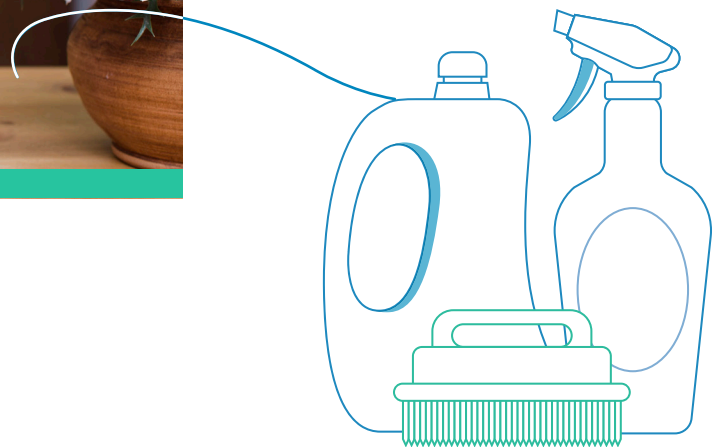
Intervention

Koinpack has established a technology-enabled packaging-as-a-service business model and distribution system to enable fast-moving consumer goods (FMCG) companies to sell their products without waste. Koinpack supplies reusable packaging to its FMCG partners for filling and distributes the finished goods to customers via existing sales points and a home-delivery service. Koinpack collects packaging returned by customers, cleans it and recirculates it, thus turning off the plastic tap. Customers who return packaging consistently are rewarded with cashback.

This intervention focuses on three key areas:

Packaging development

Koinpack has partnered with ALPLA (www.alpla.com) in packaging development. ALPLA is a production company with tremendous expertise in both single-use and reusable packaging. Building on that expertise, the partnership has developed packaging that fulfils the criteria, with prototyping and testing embedded in the development process. The current plan is to develop modular crates. Given challenges around product safety, Koinpack is currently focusing on home-care and personal-care products, with intent to expand to cooking oil, rice and other food products after gaining solid experience in the packaging side and ensuring consumer confidence.



Technology platform set-up

Koinpack empowers talented local engineers to develop cleaning and sanitation facilities for returned packaging. Koinpack has validated its cleaning and sanitization technology on a laboratory scale. Currently, Koinpack operates semi-automatic cleaning and sanitization machines and in the future this machine will become fully automatic. Koinpack also has a mobile application for its retail partners. This application serves to track sales data, product inventory and customer incentives. Koinpack also plans to launch a mobile application for end customers in the future.

Upstream and downstream partnerships

This solution works through strong collaboration with several global and local FMCG partners.

These partners provide key insights into packaging design, share feedback on standards for cleaning (the parameters utilized to define “clean”), support co-development of the business model by providing insight on the full cost structure of the current supply chain, contribute and co-create branding/communication materials, and provide support in setting up the supply chain by nudging sales points and distributors to sell and distribute Koinpack-packaged products.

Building on this, Koinpack’s downstream partnership sets up a distribution network of local micro-entrepreneurs and retail partners including waste banks, peer-to-peer sellers, *warungs*⁴ and alternative sales points that are highly engaged in making the reuse model work (early adopters). These sales partners help by providing honest feedback, educating consumers on the benefits of the reuse system and facilitating empty bottle collection as well as processing of cashback on return.



4. *Warungs* are small, family-owned neighbourhood convenience stores in Indonesia.



Challenges

While the business model has inherent challenges similar to any matchmaking platform-based business, the ultimate challenge is customers' reluctance to pay a packaging deposit up front and to return the packaging. During the first pilot, the business gauged the willingness of lower-income consumers to pay a premium up front and return packaging. The pilot successfully sold around 1000 reusable bottles per month at 20 sales points and achieved a 60 per cent return rate. The aim is to increase the return rate to 70-90 per cent in two years' time by creating a dense and flexible network of drop-off points.

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Results

Besides being impactful, Koinpack's model is desirable, feasible and viable:

- It is tailored to the local context, making zero waste affordable and available to lower-income consumers. The solution offers convenience and saves end consumers 10-20 per cent in costs.
- It empowers local micro-entrepreneurs such as *warungs*, peer-to-peer sellers and waste banks as retail partners, increasing their income by up to 15 per cent.
- It offers FMCG companies a convenient, circular alternative for the lower-income market, replacing single-use sachets and reducing plastic pollution. FMCG companies pay a fee for Koinpack's services instead of purchasing new disposable packaging.
- It replaces single-use packaging with reusable packaging, freeing up a sufficient margin to run the circular model. The model is highly scalable through partnerships with FMCG companies.

Between mid-2020 and 2021, Koinpack's sales experienced rapid month-on-month growth of 30-50 per cent. However, Koinpack's success rests on how much single-use plastic has been avoided at the source, which has been measured by the number of reusable bottles distributed, returned, cleaned and refilled in stores.



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The team has sold over 17,400 units of packaging, and worked with over 33 micro-entrepreneurs in Jakarta such as *warungs*, peer-to-peer sellers and waste banks as sales points, increasing their income by up to 15 per cent. For example, one of Koinpack's waste bank partners, the Dahlia Waste Bank in South Jakarta, regularly earns around USD 60 from selling their customers' waste to collectors. When they sell Koinpack products, they can earn up to USD 7 extra per month. **Ninety-five per cent of these sales points are female-owned and female-run businesses**, while it is women who have made the choice to shift from sachets to reusable packaging since they are the decision makers at home.

The solution has prevented 140,000 sachets from entering the environment to date, leading the shift towards reusable as standard.



Lessons learned

Bearing in mind the fundamental challenges mentioned earlier, the team has learned a lot on how customers can be incentivized to return packaging. Sales points are very influential for consumers, constantly encouraging them to return packaging for cashback. Koinpack's consumers value this incentive highly since it allows them to save 19 per cent on average after the second purchase onwards. Unlike refill models in which consumers need to bring their own container from home, Koinpack is designed to mimic current purchasing habits. Similarly, instead of bringing the empty packaging to a collection station in their neighbourhood, people can return it to the point of sale, and this can be done by any household member. Most people live within walking distance from their sales point.

The peer-to-peer sellers even offer to pick up empty bottles when delivering follow-up purchases. Consumers currently have to return their empty bottles to the sales point where they bought it. With further technological advances, the team hopes to enable empty bottle returns at any sales point.

The additional income of sales points varies and depends on how well they market Koinpack's products to their customers. Koinpack provides continued and evolving support in the form of marketing collaterals and training on how to communicate the closed loop system and its benefits to customers.

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Moving forward

With the demand for reuse solutions growing, brands are under pressure to take responsibility and governments are increasingly adopting policies to incentivize them to create solutions. Yet, in the low- and middle-income markets of South and South-East Asia, there are few viable and scalable solutions. Koinpack's goal is to roll out an integrated solution at scale that embraces circularity, help FMCG companies drastically reduce their use of difficult-to-recycle single-use plastics, and give consumers access to the most convenient, comprehensive and affordable zero-waste platform of daily necessities. To achieve this goal, Koinpack aims to scale its technology, operations and consumer base moving forward.

Scaling the technology: In 2022, the business is committed to developing the next level of technology and lay the foundation for scaling. This includes hardware solutions that cover modular cleaning technology, automated return drop boxes and modular crates; on the software front, the program is projected to include options to manage returns/delivery, interact with shopkeepers and improve the user interface.

Scaling the model and operations: Over the next three years, Koinpack plans to expand to other regions in Jakarta and increase the distribution density of sales points. This is crucial to optimize logistics, continuously improve the offering and prove the business model at scale.

This period will also see the intervention launch in Bandung and Kuala Lumpur, Malaysia, which will be an opportunity to understand market replication. By the end of 2026, the business aims to sell at least 55 million bottles per year at at least 13,000 sales points, integrate with at least 15 FMCG partners and help prevent at least 700 million sachets.



We thank Koinpack 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

