

CIRCULAR ECONOMY BUSINESS CASE STUDIES IN SOUTHEAST ASIA



Robries

-  Indonesia
-  Furniture
-  robries.com
-  Analysis period: 2018-2023

Unique Recycled Plastic Home Decor

Business Spotlight

Robries, an Indonesian manufacturer specialised in recycled plastic-based home decorations and furniture items, is addressing Indonesia's significant plastic waste challenges. As one of the world's top plastic waste producers, Indonesia faces urgent environmental issues. Robries focuses on recycling Polypropylene (PP), Low-Density Polyethylene (LDPE) and high-density polyethylene (HDPE) sourced from various plastic wastes, including bottle caps and plastic glasses, transforming them into stylish home decoration items. During their first six years of operation, Robries recycled 110 metric tonnes of plastic waste. Collaborating with talented product designers, the company creates aesthetically pleasing and functional furniture and decoration pieces. Initially sourcing plastic from waste banks and local scavengers, Robries has expanded collection efforts to include partnerships with restaurants and coffee shops, which allow Robries to collect and recycle their source-segregated plastic waste into attractive and quality decor and furnishings. Currently, Robries is ready for international expansion and seeks further partnerships to advance its circularity mission.

Keywords

Plastic recycling, Furniture, Product design

Innovation

Manufacturing, Design, End-of-life management, Resource circularity



Analysis of Robries

Context and baseline

Plastic waste represents a significant challenge in Indonesia, which ranks as the world's second-largest plastic polluter, contributing 3.2 million tonnes of mismanaged plastic waste per year according to UNEP data.¹ Established in 2018, Robries has pioneered the circularity concept to recycle plastics into attractive product designs. The company specialises in processing plastic waste into stylish furniture and home decoration.

Founder Syukriatun Niamah was inspired to start Robries after witnessing vast piles of plastic waste during a hiking trip. Leveraging her background in product design, she recognised an opportunity to transform plastic waste into valuable products. Beginning in her dormitory, she started collecting plastic waste and experimented with melting it in a small oven, crafting clocks, coasters and keychains. Today, Robries collaborates with various retailers, restaurants, coffee shops, hotels, and design firms to collect and recycle plastic waste, transforming it into polymer sheets which it uses for production of furniture and elegant objects for home decoration.

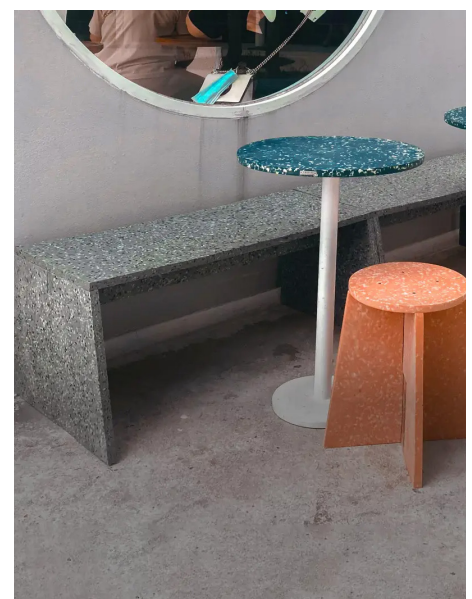
Innovation

Robries collects, sorts, cleans and recycles plastic waste sourced from waste banks, scavengers and business partners in East Java province, where the company is based. Specialising in recycling polypropylene (PP), low-density polyethylene (LDPE) and high-density polyethylene (HDPE) from various

plastic products, Robries recycles these materials into well-designed products.

The collected plastic waste is sorted by material and colour, then melted and pressed into slabs or sheets known as Robries Polymer Sheets. These sheets are transformed into unique furniture pieces, such as the popular Sawarna stools made from 3,900 bottle caps or 7.8 kg of recycled plastic per unit. Collaborating with coffee shops and restaurants, Robries also repurposes plastic cup waste into vibrant decorative panels for their establishments. Unlike other companies that blend waste plastic with materials like virgin resin or acrylic, Robries uses 100% recycled plastic exclusively.

One of the company's key strengths is creating visually appealing items from recycled materials. Collaborating closely with product designers, Robries produces aesthetically refined final products, which are regularly showcased at design exhibitions to raise awareness. While similar recycling initiatives exist in Indonesia and globally, Robries distinguishes itself through its emphasis on design and collaborative innovation. Initially focusing on selling finished products, Robries has expanded into bespoke recycling projects tailored to meet specific client needs. The company partners with coffee shops, restaurants and retailers to collect their plastic waste, transforming it into reusable and display-worthy products. As Robries grows, it not only expands its business but also raises awareness about circularity and sustainability within its client base and the broader market.



Robries' plastic flakes and furniture products

1 <https://wedocs.unep.org/bitstream/handle/20.500.11822/32898/NPWRSl.pdf?sequence=1&isAllowed=y>

Circular Economy impact

Robries contributes to the circular economy by adopting a resource circularity approach for the recovery of previously discarded waste to be used in a new product cycle.

Since its inception in 2018, when it recycled 200 kg of plastic, Robries has expanded its operations. By the end of 2023, the company had processed 110 metric tonnes of plastic waste, transforming it into polymer sheets for interior projects and 10,000 high-value furniture and decoration products.

Plastic waste recycled by Robries is diverted from landfill, incineration or leakage into the environment (particularly given its focus on very small items like caps) leading to a reduction in pollution, and greenhouse gas (GHG) and other emissions. Furthermore, using recycled plastic in home decoration and furniture items eliminates the need to produce the equal amount of virgin plastic that would be required for these products, and thus saving the materials and energy that would have been used, and avoiding the resulting emissions from virgin plastics production.

In some cases, Robries buys back and refurbishes or recycles customers' used products, giving these products a second life. Beyond its direct material impact, Robries has successfully raised awareness and fostered behavioural changes among customers, their families, and their communities.

Business and market impact

Robries has experienced substantial revenue growth, increasing from about USD 14,000 in 2019 to about USD 280,000 in 2023. In 2022, Robries received funding from Bali Investment Club, which focuses on impact investing, to expand production facilities and develop business. Initially focused on key markets in Indonesia, particularly Jakarta and Bali, the company has expanded internationally to Singapore, Malaysia, Australia, Europe, and the USA, collaborating with 600 international brands, either as plastic suppliers or as manufacturers for their interior projects and furniture products. Emphasising elegant and appealing design and sustainability, Robries attributes its success to exceptional customer service and ongoing innovation in sustainable furniture manufacturing. Robries promotes the durability of its products, marketed as stain-proof, weather-resistant, and anti-termite, with a strength capability of up to 250 kg/m². Looking ahead, the company plans to further expand its global presence and forge additional partnerships with brands, artists, designers, communities and businesses to enhance its sustainable impact and product offerings.

Stakeholders

Partnerships with diverse stakeholders have been very important to the company's growth. In its early stages, Robries received grants from Indonesia's Ministry of Research, Technology, and Higher Education in 2018 and 2019 to develop and demonstrate its production processes. The company has grown from 2 full-time employees in 2019 to 44 full-time employees including the production and management team in 2023. The company actively participates in the Precious Plastic community, a global network focused on plastic upcycling, to exchange knowledge and raise awareness about upcycling practices. Initially sourcing plastic from local scavengers and waste banks, Robries has expanded its partnerships. For instance, in collaboration with Fore Coffee, Robries repurposes plastic cup waste into furniture products for Fore's establishments. This partnership reflects a shared commitment to sustainability. In addition, Robries has also developed collaborations with designers and artists to create sophisticated artistic products. These partnerships capitalise on the company's competitive advantage in product design while enhancing the company's visibility within the design community and beyond.

Implementation

Operating within Indonesia's environmental context, Robries recognises that waste separation remains a significant challenge, particularly regarding at-source segregation, which would give the highest quality recyclable plastic waste. Effective waste segregation facilitates sourcing of materials for recycling processes. The company's partnerships with restaurants and coffee shops illustrate that segregating and collecting waste not only addresses waste management solutions but also enhances partners' reputation, creates economic opportunities for selling upcycled products, and communicates their commitment to sustainability. However, Indonesia's current waste-management policies and infrastructure have not yet resulted in widespread behavioural change towards waste segregation. In its early stages, Robries was faced with both low market awareness and negligible consumer preference for recycled products in Indonesia, which represented a marketing challenge. To overcome this, Robries has been actively collaborating with the Precious Plastic global network to gain insight into production and marketing strategies from similar initiatives.

Partnering with product designers further promotes awareness of the company's unique value proposition based on design excellence. As awareness grows within Indonesia's market, and businesses

increasingly embrace plastic recycling solutions, Robries is experiencing growth in domestic sales. The company is looking at promising opportunities for international expansion, particularly in countries with an established waste separation infrastructure and strong demand for sustainable products. The challenge ahead lies in scaling up production and logistics to meet global demand effectively.

Takeaways

The case of Robries underscores the key role of product design for acceptance of recycled products and their circular business models. A recycled product must be not only environmentally friendly but also aesthetically appealing and functional for the final consumer. Robries illustrates this approach by creating useful, stylish products that demonstrate how waste can be transformed in beautiful products with customer appeal beyond their recycled label. This perspective not only appeals to environmentally conscious consumers but also attracts a broader market interested in attractive furniture and home decoration. By emphasising both sustainability and design excellence, Robries is leveraging a competitive edge in the sustainable products market.



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Disclaimer

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