

Unlocking value from “unrecyclable” multi-layered plastic waste in India

In our Insights series, TRANSFORM shares successes and learnings from our projects to:

- Help the SME and entrepreneur community gain knowledge and learn from our projects
- Showcase to funders what can be achieved through impact-led initiatives

PROJECT AT A GLANCE:

RECYCLING MULTI-LAYERED PLASTIC INTO PREMIUM PRODUCTS WHILE DRIVING DEEP SOCIAL IMPACT

Without® extracts valuable materials from multi-layered plastic waste (MLP) and upcycles them into premium products, while creating dignified employment for informal waste collectors.



WITHOUT®

Find out more

Collaboration is key to scaling impact enterprises. TRANSFORM has captured lessons from over a decade of experience supporting impact enterprises into a playbook, a practical 'how-to' guide for public, private and non-profit leaders seeking to build and manage successful public-private partnerships. [Learn more here.](https://www.TRANSFORM.global)

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THE CHALLENGE

India generates over 3 million tonnes of MLP waste annually¹, which is nearly impossible to recycle efficiently using conventional methods. As a result, significant volumes end up in landfills or the natural environment. At the same time, the estimated 4 million informal waste collectors² who play a vital role in India's recycling ecosystem often live in poverty, with limited job security, health benefits or safe working conditions.

THE INNOVATION

Without® has developed a scalable method to recycle MLP. Its patented chemo-mechanical recycling technology VerdiCycle™ uses a water-based process at 120°C alongside atmospheric pressure to separate, de-metallise and recycle the waste into high-quality materials. The resulting polyolefin blend is transformed into VerdiFLX pellets, which are compatible with conventional manufacturing for rigid packaging. Alongside its technical innovation, Without® integrates informal waste collectors into formal employment within its supply chain, providing structured employment and improved livelihoods.

THE IMPACT

With TRANSFORM's support, Without® scaled its initial demonstration plant by upgrading machinery and adding new blow-moulding capabilities. Processing capacity increased from 5-10 kg per day to 200 kg per day – a 20x increase – enabling pilot-scale production and demonstrating commercial viability.

Without® has now successfully produced 25,000+ recycled products, including shampoo bottles, sunglasses and coasters. The project directly impacted 16 waste workers, increasing incomes by 2-3x while providing access to health insurance, job security and flexible working arrangements. A further 72 people were indirectly impacted through improved household stability and income.

WHAT'S NEXT?

Without® plans to open a larger plant to demonstrate that its model can scale commercially while continuing to deliver environmental and social impact. The company is also exploring new geographic markets, including the Middle East and the United States, to support product distribution and growth.



¹ Kashtakari Panchayat. What wastepickers (have to) waste. 2025. Available at: https://gazza162.github.io/kp_resources/MLP_Report.pdf

² British Safety Council. India's waste pickers: indispensable but invisible. 2025. Available at: <https://www.britsafe.in/safety-management-news/2025/india-s-waste-pickers-indispensable-but-invisible>

INSIGHTS:

SCALING INNOVATION IN HARD-TO-RECYCLE MATERIALS

1. PLAN FOR VARIABILITY IN POST-CONSUMER FEEDSTOCK

MLP waste is inherently inconsistent, with varying polymer compositions, printing inks and contamination levels.

Producing materials with consistent properties for commercial applications required significant R&D and process optimisation. Without® established in-house testing capabilities and rigorous sorting protocols at intake, enabling the production of reliable, commercially viable outputs despite variability in feedstock.

2. SECURE AND STRENGTHEN FEEDSTOCK SUPPLY AS YOU SCALE

As processing capacity increased, ensuring sufficient volumes of quality-sorted MLP became more complex.

Scaling production required strong coordination with informal waste worker networks to ensure consistent access to feedstock. Without® used baseline assessments to help identify capability gaps and inform targeted training and fair pricing structures, incentivising higher-quality sorting and reliable volume growth.



3. RECOGNISE THAT DEEP SOCIAL IMPACT REQUIRES INVESTMENT

Transformative outcomes often take large amounts of time and resources.

Integrating informal waste collectors into dignified employment delivered significant impact — including 2–3× income increases and access to health insurance. While the number of direct beneficiaries may appear modest, the intensity of impact per individual is high. Enterprises pursuing inclusive models should plan for the time and resources required to deliver deep social impact. This may also involve making the business case to larger industry players, demonstrating that deeper social impact can translate into lower attrition and stronger workforce stability over time.



4. EDUCATE THE MARKET TO OVERCOME PERCEPTION BARRIERS

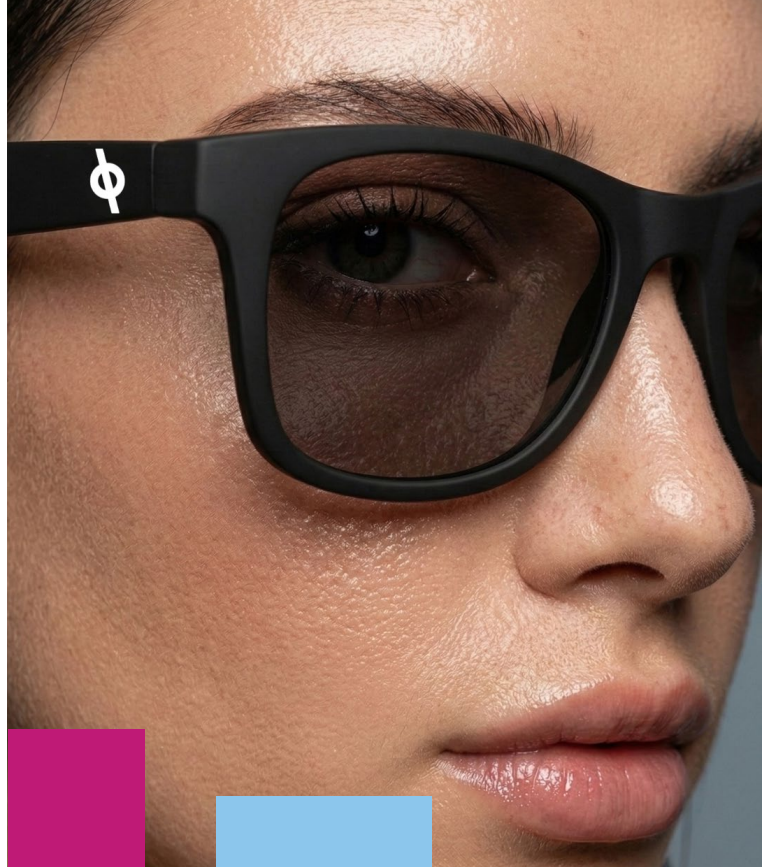
MLP is widely considered unrecyclable by industry stakeholders and potential customers.

Demonstrating proof of concept was essential to challenge assumptions about MLP recyclability. Direct engagement, product demonstrations and education helped shift stakeholder confidence. By showcasing finished consumer products — including shampoo bottles made entirely from recycled MLP — Without® provided tangible proof of quality and commercial viability.

5. LAUNCH EARLY AND ITERATE THROUGH REAL-WORLD FEEDBACK

Material performance challenges only became visible at product stage.

Rather than waiting for perfection, Without® brought products to market early, using iteration to accelerate learning and improve product performance. By manufacturing finished goods, the company became a direct user of its own materials, allowing it to identify issues that would not have been visible if it had sold pellets alone.



TRANSFORM is an impact accelerator that has united corporates, donors, investors and academics to support visionary enterprises across Africa and Asia between 2015 and 2026. Together, we have tested and scaled new market-based solutions to build inclusive, sustainable economies, empower marginalised communities, and drive climate-resilient growth.

By combining grant funding, business insight and research, TRANSFORM has advanced innovative business models to help solve global challenges. The initiative has been led by Unilever, the UK's Foreign, Commonwealth and Development Office, and EY.

Having delivered its intended outcomes, TRANSFORM concludes in 2026, leaving a strong legacy of more resilient enterprises and insights to inform future collaborations.