Upcycling plastic waste into valuable building materials

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:

UPCYCLING POST-CONSUMER PLASTIC WASTE INTO COMPOSITE BUILDING MATERIALS

Indian startup, Saltech, was founded in 2018 with the goal of providing cutting-edge solutions for the growing issue of waste. Its innovative recycling technology transforms waste, including mixed plastics and construction excess, into high-value building materials.

THE CHALLENGE

It is estimated that over 7.4 megatonnes of plastic waste will be improperly managed or left uncollected in India in 2024; ultimately, finding its way into the natural environment[1]. At the same time, India's buildings and construction sector is highly carbon-intensive, contributing around one-sixth of the nation's total GHG emissions.[2]

THE INNOVATION

TRANSFORM supported Saltech with mainstreaming its patented technology, which upcycles mixed plastics as well as construction and demolition waste into high value building materials, from pavers and bricks to roof shingles and tiles. It did this by upgrading Saltech's recycling plant capacity to process up to 2.5 tonnes of waste per day; securing key certifications and ecolabels for greater credibility when engaging with partners; and developing a digital presence with a robust brand and marketing strategy.

THE IMPACT

So far, Saltech has:

- Recycled more than 65,500 kg of plastic waste
- Diverted over 163,700 kg of non-recyclable waste from landfills or incinerators
- Produced over 52,100 square feet of composite products from the recycled waste materials

Its composite products also boast a significantly lower carbon footprint compared to traditional construction materials like concrete, clay and metals. Plus, no water is used in the process.

WHAT'S NEXT?

With the plant's ability to process waste materials now significantly improved, Saltech will continue to work towards its mission of becoming a leading innovator in the sustainable construction materials industry. In fact, the enterprise hopes to refine and scale the world's first Carbon-Negative Building-Integrated Photovoltaics (CN-BIPV) solution – pavers used as part of a building's structure, with the capacity to generate electricity from the sun.

Find out more

Collaboration is key to scaling social enterprises. Learn more about the successful programmes that other enterprises and funders have delivered together. Read more stories here.

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1 *Plastic Overshoot 2024 report by Earth Action. https://plasticovershoot.earth/wp-content/uploads/2024/04/EA_POD_report_2024.pdf. 2024.*

2 *WRI. India's Shift to Low-carbon Construction Must Not Leave Workers Behind. 2024.*

INSIGHTS: SUCCESSFULLY SCALING AND MAINSTREAMING NEW TECHNOLOGIES

1. FACTOR IN LONGER TIMELINES IF USING NEW TECHNOLOGIES

Upgrading the plant capacity took longer than expected as Saltech's technologies are entirely new and there were no blueprints in place for its capacity upgrade.

Numerous iteration cycles of the internal system designs were needed to eventually achieve the optimal solution.

2. USING AN EXTERNAL PARTY HELPED STREAMLINE DATA COLLECTION

Securing certifications and ecolabels requires large amounts of data collection which is challenging and time consuming.

By employing an external agency to support with collecting and tracking the data, Saltech was able to streamline the application process. The systems have remained in place so Saltech can continue to track the data itself.

3. PILOTS AND PARTNERSHIPS REQUIRE FLEXIBILITY

Saltech experienced delays in the launch of a pilot study due to a number of unforeseen circumstances.

It had secured a partnership with a corporate foundation, providing land and infrastructure support; but this was postponed due to cost and availability issues. Internal reorganisation within the foundation itself also led to multiple changes in the project's designated point of contact.

In response to these unanticipated developments, Saltech demonstrated flexibility with timelines, maintained open communication with the partner, and remained committed to finding solutions. Both parties are currently considering a pivot: to make up for the delays, they may consolidate the pilot study to a single location but double the capacity initially agreed.

4. CREATING A STRONG BRAND PRESENCE IS CRITICAL IN TODAY'S DIGITAL WORLD

A unique and strong brand identity is important when it comes to building long-lasting relationships with varied stakeholders.

With TRANSFORM's support, Saltech found a digital marketing firm to collaborate with on its branding, as well as develop a new informative and user-friendly website. Coupled with a newly established social media presence, the enterprise is generating brand awareness, educating stakeholders about its offerings, and engaging meaningfully with its target audience.

TRANSFORM

TRANSFORM is an impact accelerator that unites corporates, donors, investors and academics to support visionary enterprises across Africa, Asia and beyond. Together, we test and scale new solutions that tackle environmental challenges, improve health and wellbeing, and build inclusive economies.

Combining grant funding, business insight and research, TRANSFORM is advancing the development of innovative business models to help solve global challenges. It was established in 2015 and is led by Unilever, the UK's Foreign, Commonwealth and Development Office, and EY.