



The Takataka team | Photo source Takataka Plastics

Innovation > Health & Wellbeing > Ugandan project recycles plastic waste into construction materials

UGANDAN PROJECT RECYCLES PLASTIC WASTE INTO CONSTRUCTION MATERIALS

 HEALTH & WELLBEING

A project uses locally-made machines to recycle plastic bottles into construction materials

Spotted: In Uganda, polyethylene terephthalate (PET) bottles have a low recycling value. As a result, discarded PET bottles are usually either burned or strewn across streets and fields as litter. To make matters worse, PET is very difficult to process. Uganda was stuck with no way to reduce its mountains of PET waste until Paige Balcom, a PhD student in mechanical engineering from the University of California at Berkeley came up with an idea.

Balcom had earlier spent time in Uganda on a Fulbright scholarship and was looking for a way to help her friends there to improve their environment. Her idea was to develop small machines that can sort, shred and melt the plastic to allow it to be reformed into new materials. She partnered with Peter Okwoko, a Ugandan entrepreneur and educator, and the pair came up with their business, Takataka Plastic.

Takataka (which means “waste” in Swahili) is focusing on using the plastic for construction materials. Uganda has a huge housing shortage, and the Ugandan construction industry is growing in excess of 10 per cent annually, making this a growing market for materials. The companies prototype wall tiles are more than twice as strong as conventional ceramic alternatives and their prototype pavers are more than 14 times stronger than concrete pavers. Both can be sold at market rates for a €1.77 profit per square metre.

According to Balcom, the company has built its own equipment primarily because, “locally built machines are cheaper and easier to maintain and fix if they break.” Takataka has used an open-source design for their machines, “but modified them to use locally available parts and fabrication techniques.” The machines are also easy to replicate, so it is inexpensive to scale the project up.

Takataka joins a host of other innovations aimed at improvement recycling methods and developing new products from waste materials. Recently, we have covered other innovations in this area, including [building materials](#) made from recycled rubber and a project that turns [rubbish](#) into energy.

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Takeaway:

Takataka is an excellent example of a home-grown solution to a local problem. Every day, Uganda generates around 600 metric tons of plastic waste. Currently, most of this is burned, which releases lethal carcinogens, toxins and CO2 into the environment. While Takataka is currently working on a small scale, in the future it could create a source of income for informal waste collectors, such as those who sell plastic waste to recycling companies in Kampala, becoming a circular model for waste-reduction.