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Ocean plastic is a huge problem. Blockchain could be part of the solution.

It's all about stopping the flow of plastic into the marine environment.



Plastic Bank uses blockchain and cryptocurrency technology to give people living in impoverished areas an incentive to recycle. Courtesy Plastic Bank

Oct. 16, 2018 - By Lynne Peeples

The [world's oceans are awash in plastic](#), and the problem is only getting worse. Each year, [8 million metric tons of plastic debris](#) ends up in the oceans, and that's on top of the 150 million metric tons already in marine environments. The debris ensnares seabirds, starves whales and [infiltrates the entire marine food chain](#) — including humans, too, when we eat seafood.

Recently, there have been some high-profile [efforts to remove plastic debris already in the oceans](#). Less well-known are efforts that aim to keep plastic from getting into oceans in the first place.

In one especially promising initiative, a Vancouver, British Columbia-based company called Plastic Bank is promoting [plastic recycling](#) in developing nations — which contribute disproportionately to the ocean plastic problem — via a blockchain-based system that lets locals trade collected plastic for health care, tuition, cooking oil and other goods and services.

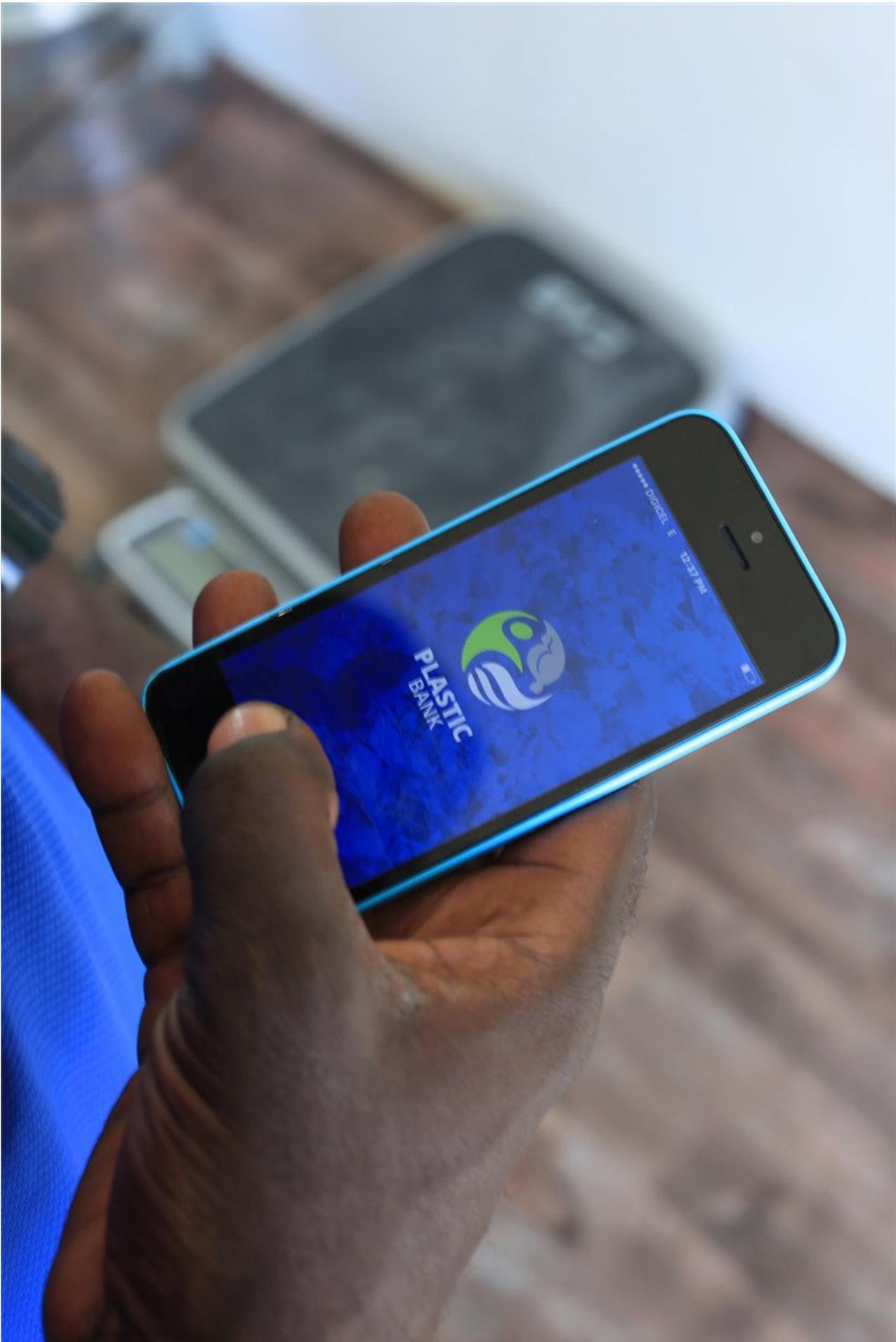


One of Plastic Bank's physical drop-off centers, where community members can exchange plastic for cash or items from the store, including solar power cell phone charging. Courtesy Plastic Bank

Plastic waste is a particular problem in poor nations because they often lack a reliable waste-management system. In some countries, large swaths of land are now carpeted with bottles, bags and other plastic debris — and much of that eventually winds up in rivers, and is ultimately dumped into the ocean. According to one recent study, 90 percent of plastic debris in the ocean [comes from 10 rivers](#), eight in Asia and two in Africa.

"We have to stop the flow of plastic from entering the ocean," says Plastic Bank co-founder David Katz. "And to do that, we need to go to areas leaching the most into the ocean and do what we can there."

So Plastic Bank went to Haiti and set up 40-odd recycling centers where plastic is exchanged not for cash — which could be vulnerable to the petty theft that is a problem in many parts of the country — but for [cryptocurrency](#), which is largely theft-proof. A blockchain platform developed in partnership with IBM records transactions in an encrypted digital ledger, with the digital tokens placed into an account via a mobile phone app and then used to make purchases.



Bank's app is free to download and offers a way for locals to get paid outside of traditional currency. Courtesy Plastic Bank

The system "ensures the right person is getting the right amount at the right time," says Plastic Bank's other co-founder, Shaun Frankson. "When you stave out cash, you increase the value this brings into communities without adding danger."

Plastic collectors in Haiti get an above-market price for the waste, which can amount to \$5 per day — a decent wage in a country where the average citizen lives on \$2 a day, [according to the World Bank](#). Over time, they can build credit and earn low-interest loans — a rare opportunity in a nation where citizens often lack a birth certificate or even a last name.

Jim Leape, co-director of Stanford University's Center for Ocean Solutions, praises the initiative for addressing poverty as well as the plastic problem. "That's a part of this equation that we urgently need to address," he says.

Since it opened the first center in Haiti in 2015, Plastic Bank has taken in the equivalent of more than 100 million plastic bottles. The plastic is processed into flakes or pellets and then exported to other countries, where it's used to make new products.

Plastic Bank is now expanding into the Philippines, Brazil and Indonesia. The goal is to have centers everywhere there is an abundance of poverty and plastic waste.

"We know that poverty is persisting and that those [areas with the greatest poverty are the greatest contributors to the plastic problem](#)," Katz said. "The beauty of this is that we are using one problem to solve the other."

Still, the effort is not without challenges. One of the biggest is finding customers willing to buy the plastic that Plastic Bank has collected. "But if end users, like consumer brands and, ultimately, consumers, are willing to pay a premium price for plastics collected by Plastic Bank, then that's an opportunity for their market," said Rob Kaplan, CEO of Circulate Capital, a Brooklyn-based investment management firm that's working to find [solutions to the ocean plastic problem](#).

To encourage potential buyers, Plastic Bank has coined the designation "social plastic" to make it possible for manufacturers that purchase the plastic to highlight the cause on product labels, much like companies label coffee, cotton and other agricultural products "fair trade."

"This gives the consumer the ability to participate, just by buying something," Katz said.

But for all the potential in Plastic Bank's approach, Katz and other experts say it won't be enough to save the world's oceans from the continuing deluge of plastic waste. [Bans on plastic bags](#) and straws could help, as could a greater awareness of the problem among consumers.

"The massive dump of plastics has brought home to us that decisions we make every day in the coffee shop and grocery store are showing up in our oceans at a scale none of us thought possible," says Leape. "And it is bringing to the fore the imperative to build an economy around materials that we can use over and over again."

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