

GIANT BARRIERS TO KEEP WASTE OUT OF THE OCEANS

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

The barriers are made of recycled plastic, rigid and resistant enough to survive floods or the impact of large objects carried by currents, such as trees. | Photo Credit: [Fabio Dalmonte](#)

Plastics that invade the sea poison fish and birds, entering the food chain and even the food we eat. That's why Boyan Slat, the young Dutch inventor who founded The Ocean Cleanup, wants to clean up the oceans. But why not try to capture plastic waste before it reaches the sea? This would avoid the degrading effect of salt water, which crumbles it into micro-plastics.

It's a race against time. The more than eight million tonnes of plastic that end up in the sea every year become more and more dangerous for marine fauna as they break up and are mistaken for food. Almost all Pacific albatrosses now have plastic fragments in their stomachs, which kill more than a million seabirds every year, according to UNEP. It's not widely known that nearly 90 per cent of the plastic that ends up in the ocean has been transported there by one of 10 great rivers, the most polluted in the world: Yangtze, Nile, Ganges, Indus, Yellow River, Hai he, the Pearl River, Amur, Niger and Mekong.

Fabio Dalmonte, a 36-year-old born in the Romagna region of Italy and now living in London, discovered this while participating in a joint research project on waste management conducted by his alma mater, the University of the West of Scotland, and the Universitas Indonesia in Jakarta. Dalmonte graduated in management engineering in Bologna before obtaining a master's degree in Scotland and now works as a consultant in London for a company specializing in environmental issues. He was impressed by the huge amount of debris that floated on the Jakarta River, the Ciliwung. "In some parts of Asia, rivers are treated like a dumpster, and the consequences are there for all to see in the world's seas," he says.

He came up with the idea of stopping the flow of plastic before it reaches the sea, with a system of barriers that can catch garbage to send to recyclers – and that don't prevent the passage of boats and fish. To make his dream come true, he partnered with Mauro Nardocci, a 38-year-old business manager from Rome and former marketing director in Central Europe for the pasta brand Barilla, now working as an executive coach in New York. Together they founded a startup called SEADS, an acronym for Sea Defence Solutions. The company gave birth to the Blue Barriers, a system that can be replicated and adapted to fit any river from the Nile to the Ganges.

"There are two floating barriers, positioned diagonally on the river and slightly offset, so as to create a current that transports waste to the bank, where a collection basin is built to accumulate, collect and then send the waste to be sorted," explains Dalmonte. The two barriers are made of recycled plastic, rigid and resistant enough to survive floods or the impact of large objects carried by currents, such as trees. A demonstration test will be conducted this month in Italy, on the Lamone river, and negotiations with the municipality of Jakarta to test the system on the Ciliwung are also well underway.

"The mountain of waste that ends up in the Ciliwung and then in the sea, accumulating on the islands in front of the Gulf of Jakarta, ruins the beaches, damages tourism and causes serious problems to local communities," notes Dalmonte, "not to mention environmental damage such as a reduction of the fish population in the sea and the rivers."

Ideally, the barriers should be installed as close as possible to the mouth of the river, but the municipality of Jakarta would like to place several of them at different heights, to establish greater control over the river. Next to each couple of barriers, sorting centers will be created, which could also receive waste from nearby urban and industrial areas, so as to generate profits for local communities. The project is expected to bring social benefits as well.

"In Jakarta and developing countries in general, many poor people collect their own waste to recycle and sell it," says Dalmonte, "One of our parallel goals is to involve them in the activities that will be created around the barriers. We would like to make it possible for the municipality to include rag pickers in the waste collection system, providing them with adequate working conditions." In this way, everyone will benefit.

This article is being published as part of Earth Beats, an international and collaborative initiative gathering 18 news media outlets from around the world to focus on solutions to waste and pollution.

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