

RECYCLING AS COLONIZATION

Global investigation reveals America's dirty secret

What happens to your plastic after you drop it in a recycling bin? According to promotional materials from America's plastics industry, it is whisked off to a factory where it is seamlessly transformed into something new.

A team of Guardian reporters in 11 countries has found:

- ▶ **Last year, the equivalent of 68,000 shipping containers of American plastic recycling were exported from the US to developing countries that mismanage more than 70% of their own plastic waste.**
- ▶ **The newest hotspots for handling US plastic recycling are some of the world's poorest countries, including Bangladesh, Laos, Ethiopia and Senegal, offering cheap labor and limited environmental regulation.**
- ▶ **In some places, like Turkey, a surge in foreign waste shipments is disrupting efforts to handle locally generated plastics.**
- ▶ **With these nations overwhelmed, thousands of tons of waste plastic are stranded at home in the US, as we reveal in our story later this week.**

Reflecting grave concerns around plastic waste, last month, 187 countries signed a treaty giving nations the power to block the import of contaminated or hard-to-recycle plastic trash. A few countries did not sign. One was the US.

Of the 9% of America's plastic that the Environmental Protection Agency estimated was recycled in 2015, China and Hong Kong handled more than half: about 1.6m tons of our plastic recycling every year. They developed a vast industry of harvesting and reusing the most valuable plastics to make products that could be sold back to the western world.

But much of what America sent was contaminated with food or dirt, or it was non-recyclable and simply had to be landfilled in China. Amid growing environmental and health fears, China shut its doors to all but the cleanest plastics in late 2017.

Since the China ban, America's plastic waste has become a global hot potato, ping-ponging from country to country. The Guardian's analysis of shipping records and US Census Bureau export data has found that America is still shipping more than 1m tons a year of its plastic waste overseas, much of it to places that are already virtually drowning in it.

A red flag to researchers is that many of these countries ranked very poorly on metrics of how well they handle their own plastic waste. A study led by the University of Georgia researcher Jenna Jambeck found that Malaysia, the biggest recipient of US plastic recycling since the China ban, mismanaged 55% of its own plastic waste, meaning it was dumped or inadequately disposed of at sites such as open landfills. Indonesia and Vietnam improperly managed 81% and 86%, respectively.

Minh Khai, a village on a river delta near Hanoi, is the center of a waste management cottage industry. Rubbish from across the world, inscribed in languages from Arabic to French, lines almost every street in this community of about 1,000 households. Workers in makeshift workshops churn out recycled pellets amid toxic fumes and foul stench from the truckloads of scrap that are transported there every day. Even Minh Khai's welcome arch, adorned with bright red flags, is flanked by plastic waste on both sides.

In 2018, the US sent 83,000 tons of plastic recycling to Vietnam. On the ground, America's footprint is clear: a bag of York Peppermint Patties from Hershey, with US labeling, and an empty bag from a chemical coatings manufacturer in Ohio.

While the exact health effects of workers' exposure to plastic recycling operations have not been well studied, the toxic fumes resulting from the burning of plastics or plastic processing can cause respiratory illness. Regular exposure can subject workers and nearby residents to hundreds of toxic substances, including hydrochloric acid, sulfur dioxide, dioxins and heavy metals, the effects of which can include developmental disorders, endocrine disruption, and cancer.

The Vietnamese prime minister, Nguyễn Xuân Phúc, ordered a tightening on scrap standards in July 2018, and legal monthly imports were cut to one-tenth of what they had been. As of April, more than 23,400 shipping containers of scrap remain held up in customs. But business continues to boom in Minh Khai. Tham said that scrap is still arriving from Haiphong, northern Vietnam's largest port, and other parts of the country every day, and records show a significant rebound in imports.

As countries like Vietnam, Malaysia and Thailand banned imports, records show the plastic waste fanning out to a host of new countries. Shipments began making their way to Cambodia, Laos, Ghana, Ethiopia, Kenya and Senegal, which had previously handled virtually no US plastic.

The Guardian found that each month throughout the second half of 2018, container ships ferried about 260 tons of US plastic scrap into one of the most dystopian, plastic-covered places of all: the Cambodian seaside town of Sihanoukville, where, in some areas, almost every inch of the ocean is covered with floating plastic and the beach is nothing but a glinting carpet of polymers.

"I cannot accept plastic being imported into our country," said a resident, Heng Ngy, 58. Ngy and his wife live in a

wooden house on stilts that seems to hover on a sea of plastic. A pungent stench wafts up to the open-aired rooms.

Cambodia's waste problem is believed to stem from its own use of plastic and a lack of any system for dealing with it. No one interviewed in Sihanoukville had any idea that plastic recycling was being exported from the United States, and what happened to the plastic after it arrived is unclear.

Experts estimate that 20% to 70% of plastic entering recycling facilities around the globe is discarded because it is unusable – so any plastic being recycled at Sihanoukville would inevitably result in more waste there.

How does your plastic get from your curbside to a village in south-east Asia? Plastic's first stop on its months-long journey is a recycling facility where it is sorted into bales based on its type – soda bottles, milk jugs and clamshell-style containers, for instance, are all made of subtly different kinds – and readied for sale.

Waste plastic is a commodity, and recycling brokers search across the US and abroad for buyers who will want to melt the plastic down, turn it into pellets, and make those pellets into something new.

In the past, it made economic sense to ship the plastic to Asia, because shipping companies that transport China's manufactured goods to the US end up with thousands of empty shipping containers to carry back. In the absence of American goods to fill them, the companies have been willing to ship out America's recycling at rock-bottom rates.

Steve Wong, a Hong Kong-based businessman, is one of the middlemen who connects your recycling with international buyers. *"At one time, I was one of the biggest exporters in the world,"* he said, worth millions. Now, Wong said, his company, the Hong-Kong based Fukutomi Recycling, was deep in debt.

Wong's problem is hardly a lack of supply. Each month the equivalent of thousands of shipping containers worth of recyclable plastics, which used to be exported, are piling up all over the United States. Nor is his worry a shortage of demand for plastic. It is desperately needed by factories in China for manufacturing into myriad new products – from toys and picture frames to garden gazebos.

What is nearly killing his business is the fact that many countries have soured on the recycling industry, after unscrupulous operators set up shop, operating as cheaply as possible, with no regard for the environment or local residents.

"In our industry, if you do it properly, you save the environment," Wong said. "If you do it improperly, you destroy the environment."

As far as profits go, the numbers just barely favor recycling.

Wong said he might spend \$150 to buy a ton of plastic scrap from a US recycler. Once it is shipped abroad, sold to a processor, turned into pellets and then again shipped to a manufacturer, the seller might ask as much as \$800 per ton.

Yet the cost of similar virgin plastic, which is often higher quality, is just \$900 to \$1,000 a ton.

Wong believes the answer in the future will be to process the material closer to the United States. That is why he has planned trips to meet with government officials in the Dominican Republic and Haiti, and why, on a recent Wednesday, Wong crisscrossed back and forth through heavy traffic in the Mexican city of Monterrey, located about 150 miles south of Laredo, Texas.

At one reseller – a corrugated-metal warehouse piled floor-to-ceiling with plastic that included shimmery sheaths of wrapping from US retail stores – Wong wanted to test the quality of the supply. He filled a baggie with ground-up flakes of black plastic from picking crates, then took a cigarette lighter and lit one of the flakes on fire. He carefully sniffed the smoke to get a sense of what variety of plastic it was.

At Wong's next stop, an existing Monterrey recycling processor, you could get a sense of the work the new factory might do.

A rudimentary plastic processing machine stretched 40ft across the bare dirt of the warehouse floor. The processor takes rejected car parts and grinds them up into confetti-sized flakes. Workers feed these flakes into a flume that channels them past a heater to melt them. The melted plastic is pressed into long, white strings, which are stretched across the room and allowed to harden. At that point, they are chopped into pellets a little bigger than rice grains.

Wong said he would like to build more modern factories with up-to-date systems for eliminating toxic releases to the air and water. But he said he was sure that many of his less scrupulous competitors would keep exporting on the cheap. He suggested that even in countries that had banned plastic imports, the material continued to be smuggled in.

With US plastic landing in countries that have never seen it in such quantities, local residents are crying foul.

In the Philippines, about 120 shipping containers a month are arriving in Manila and an industrial zone in the former US military base at Subic Bay. Records indicate they were filled with plastic scrap shipped from such places as Los Angeles, Georgia and the Port of New York-Newark.

From the Manila port, shipping records and Philippines customs documents show, some of the US plastic was

transported to Valenzuela City. The area, on the outskirts of the Philippine capital, is known as "Plastic City" and residents are increasingly concerned about the number of processing factories sprouting in their midst.

Yet recycling is also one of the area's biggest income sources. Officials and residents said they had assumed the plastic being processed in their town was the Philippines' own waste. None realized that some of it was being shipped from the US. Representatives for the factories receiving US waste declined to be interviewed.

Since China closed its doors, the amount of plastic recycling Turkey takes in from abroad has soared, from 159,000 to 439,000 tons in two years.

Each month, about 10 ships pull into the ports of Istanbul and Adana, carrying about 2,000 tons of cheap US scrap plastic that is no longer wanted by China. Most of it comes from the ports of Georgia, Charleston, Baltimore and New York. Some of it is described in shipping records as "Walmart film scrap", the clear cling wrap used to secure huge pallets of products sold by Walmart. (Walmart declined to comment on the issue.) These cargo ships join dozens of others from the UK and other European countries.

The environmental and social ramifications of America's plastic exports are shocking even to those in the industry. Bob Wenzlau is considered one of the founding fathers of the US curbside recycling system, having helped to launch the program in Palo Alto, California, in 1976.

Curbside recycling "was started with a really good intention; I used to feel so proud," said Wenzlau. Now, after learning of the effects the nation's exports are having overseas, he said, "my heart aches, because the system is doing harm".

Wenzlau recently convinced the Palo Alto city council to pass a measure requiring the city's recyclers to report on the social and environmental consequences of any recycling that goes to foreign countries.

Even in San Francisco, long hailed for the high percentage of waste it is able to recycle, the head of the city's waste disposal provider has said that the system is failing.

"The simple fact is, there is just too much plastic – and too many different types of plastics – being produced; and there exist few, if any, viable end markets for the material," Michael J Sangiacomo of *Recology* recently wrote in an op-ed.

A study released this spring (*wastetrade.org*) by the environmental group Gaia documented the human toll of US plastics exports on the countries that receive them.

"The impact of the shift in plastic trade to south-east Asian countries has been staggering – contaminated water supplies, crop death, respiratory illness from exposure to burning plastic, and the rise of organized crime abound in areas most exposed to the flood of new imports," the report found.

For many experts, the most frightening example of how an out-of-control recycling industry can overwhelm a country is Malaysia. Immediately following the China ban, it became the go-to destination for US plastic and is still paying the price.

In the first 10 months of 2018, the US exported 192,000 metric tons of plastic waste to Malaysia for recycling. Some of the factories had licenses to process foreign waste. Some only had licenses to deal with Malaysian plastic waste but secretly processed foreign waste. Often, such "processing" actually meant illegally burning plastic, with the toxic fumes inhaled by Malaysians living near unlicensed factories and dump sites.

In October, the Malaysian government announced plans to immediately stop issuing new permits for importing plastic waste, and to end all plastic waste importing within three years. Even so, thousands of tons of junk plastic remain heaped on the landscape, left behind by unscrupulous business operations.

On the outskirts of Jenjarom, a town in the district of Kuala Langat, where local authorities shut down 34 illegal factories last July, a land manager struggled to get rid of 10ft-high piles of plastic left under a corrugated roof by illegal importers of foreign waste. Nearby, a huge field of foreign plastic had been abandoned by the former renters: Chinese illegal factory owners, who left without warning following the crackdown.

And the illegal importation of US waste is continuing. According to the environmental minister Yeo Bee Yin's accounts to the local press, many shippers simply change the codes on the documentation for their cargo containers to make it look like they are sending virgin plastic, which isn't regulated, instead of the same old recycling scrap.

in Sungai Petani, a town of half a million in the north-west state of Kedah. Officials say there may be 20 illegal plastic-processing factories there. *"You wake up at midnight because of the smell,"* said Christina Lai, a Sungai Petani activist-

"One day this land will be taken over by rubbish and not humans."

Excerpted from an ongoing series in the Guardian:

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