

# Trash Battle!

## Waste, Landfills and Economic Growth Worldwide

*'Drowning in Garbage.'* The Washington Post. Accessed April 06, 2018.

[https://www.washingtonpost.com/graphics/2017/world/global-waste/?utm\\_term=.cad6229c52fb](https://www.washingtonpost.com/graphics/2017/world/global-waste/?utm_term=.cad6229c52fb)

1. **272**

acres

**6,000**

tons of trash/day

2. **250 mil**

inhabitants produce

**0.8-1**

Kg plastic waste/year

3. **25 mil**

people generate only

**2.5 mil**

tons of waste/year



Jakarta, Indonesia

Jakarta has been experiencing a lot of growth recently, and as a result the **trash produced in the city, and country as a whole has increased.**<sup>1</sup>

Trash picking is a job that has emerged from the trash, and people risk life and limb to collect plastic waste to be melted into pellets for future reuse.

Jakarta has no room for more landfills and no formal recycling industry, so much of the city's waste makes its way to waterways. This means that Indonesia, the country with the world's highest marine biodiversity, is **also the country with the second highest amount of marine waste, after China.**<sup>2</sup>



Lagos, Nigeria

Lagos has, on average a **much lower amount of waste generated per person than other countries around the world.**<sup>3</sup> Much of this is due to scavengers employed at landfills to aid in recycling efforts.

However, electronic waste does still pose a problem, with European and North American nations sending their e-waste to the country. These computers, cellphones, etc. are difficult to dispose of due to toxic chemicals within their components that may seep into the groundwater. This includes lead, arsenic, selenium, and mercury.





Waste, Landfills and Economic Growth Worldwide

4. 6-Part Initiative

- 1. Organics collection in all 5 boroughs
- 2. Single-stream recycling and a save-as-you-throw incentivization program
- 3. Recycling programs in NYCHA developments
- 4. Zero Waste in public schools, starting with a pilot program
- 5. Expansion of opportunities to reuse and recycle textiles and electronics
- 6. 90% reduction of commercial waste through other programs

<https://www1.nyc.gov/site/sustainability/initiatives/zero-waste.page>

5. 98% Aluminum Recycled

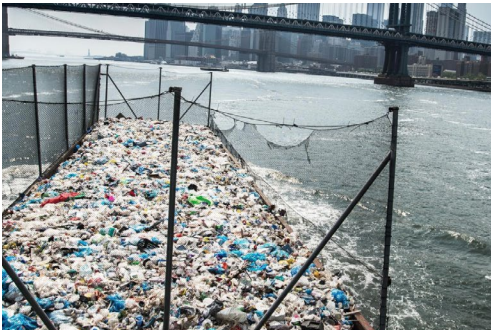


New York City, USA

New York being the most densely populated city in the U.S., the fact that it produces a lot of trash is no surprise. But at 33 million tons per year, it also produces more trash than any mega-city in the world. Most of their trash makes its way to poorer states such as Pennsylvania and Ohio to be incinerated. The poorer boroughs of the city produce a larger share of the waste. According to the Washington Post,

“...In the United States, the poorer population also contributes a significant amount of garbage, much of it fast-food packaging.”

New York City does, however, do some things well. They separate their recyclables even though the recyclables industry is small, and they have a Zero Waste Program in the Works that contains some provisions that promise to narrow the class divide when it comes to waste disposal in the five boroughs.



Sao Paulo, Brazil

The metropolitan area of Sao Paulo is home to 21 million and counting. And, as such, their landfills are also growing in size. Unlike in some of the other countries discussed, however, in Sao Paulo scavenger/trash-picker is considered a career. People will go out in collectives to find plastic, aluminum cans, and paper to be sold to recycling companies. As a result of this, almost all of their aluminum cans are recycled.



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6. 36 mil people generate only 12 mil tons of waste/year

7. 3 main categories

- 1. Paper
- 2. Plastic
- 3. PET (plastic bottles)

<https://www.japantimes.co.jp/life/2017/06/10/environment/plastic-fantastic-tokyo-recycle-waste/#.WgutD1tSxpg>

8. 2 mil residents total

9. 29% recycled



Tokyo, Japan

Despite being the most populous metropolis on Earth, Tokyo doesn't produce as much waste as other megacities, like New York. A lot of this has to do with their lack of space. A heavy emphasis is put on recycling, and most families sort their trash into categories by themselves. There are only 12 landfills in Tokyo (including one on reclaimed land in Tokyo Bay), but there are 48 incinerators that provide energy to the city.



Amsterdam, Netherlands

Not counting the area around its metropolitan center, Amsterdam has only 900,000 residents. Partly due to their size, Amsterdam manages its waste very well; so well, in fact, that much of London's trash is sent to Amsterdam because England's incinerators can't handle their volume. Most trash is incinerated and used for fuel and therefore less likely to be sorted, but all plastic bags at grocery stores must be paid for and a great deal of the city's trash makes it to the recyclables.





America and the Landfill

“Land of Waste: American Landfills and Waste Production.” Accessed April 07, 2018.

<https://www.saveonenergy.com/land-of-waste/>

IO. **5 miles**  
Mission Canyon

1960-1976  
21,310,000 tons of waste

**12 miles**  
Burbank LF Site No. 3

1968-2084  
2,000,000 tons of waste

II. **1/2**  
Carbon Dioxide + H<sub>2</sub>O  
**1/2**  
Methane Gas

I2. **\$35/ton**  
on 35 million tons  
in Ohio



A Brief History of the Landfill

Before the 20th century, there were no landfills as we know them in the United States. People buried or burned their trash or, sometimes, left it outside city limits to prevent disease.

Fresno Municipal Sanitary Landfill was the first of its kind in 1937, and was advanced when compared with the earliest landfills (little more than holes in the ground in ancient cities). Ultimately, it would contaminate the surrounding soil and groundwater and cause methane to seep into the air.

Landfills like Fresno ceased to be in 1976 with the Resource Conservation and Recovery Act. Part of the law required landfills be lined with plastic or cloth to prevent contamination like that seen at Fresno.

Now California (and especially Los Angeles) is home to quite a few more landfills. In fact, there are 2 within 12 miles of UCLA campus.<sup>10</sup>

Greenhouse Gases

Landfills are, of course, dangerous to the environment partly because of the gases they emit. Decomposition of organic material by bacteria results in three main gases, Carbon Dioxide, Water Vapor, and Methane<sup>11</sup>, along with some trace amounts of oxygen, hydrogen, and

non-methane Organic Compounds (NMOCs) which can cause smog if left unchecked.

Methane gas is of the biggest concern lately, because, though Carbon Dioxide stays in the atmosphere longer, methane is more effective at absorbing heat from the sun.

The Trash Trade

“The trash trade is a \$4 billion industry, and many state landfills are only too happy to take garbage from other states.”

Many states in the U.S., chiefly the poorer, less populous states, accept trash from other states for low rates.<sup>12</sup> One of the most notable such cases is Pennsylvania, which accepts trash from New York and is one of the country’s biggest sources of methane gas.

America and the Landfill

I3. **1,606 lbs**  
per year per person

**6,351 lbs**  
per year per family

**254 mil tons**  
per year per family

I4. **6 times**  
the plastic bottles in  
2004 as in 1997

I5. **34.3%**  
of waste diverted



How Bad is It?

Americans on average produce 4.4 lbs of trash every day. This may not seem like much at first, but when examined on a macro scale it becomes overwhelming. Taking into account the whole of America’s population, that 4.4 lbs of trash per person becomes 728.000 lbs of trash per day. When taken together over a year, the amount of trash produced by individuals, families, and the whole country becomes a staggering value.<sup>13</sup> However, though the US is producing more and more trash per year<sup>14</sup>, the rate of recycling in the country is also at an all time high.<sup>15</sup>

Rob Greenfield

Artist and activist Rob Greenfield made a physical visualization of this trash in the project 30 Days of Wearing My Trash. He created a suit of vinyl bags and carried his trash in them for a month around New York City. Though he actually produced 34.3% less waste than the average American, the suit made life noticeably more difficult. He made suggestions to make the bulk of the trash less overwhelming, though.



<http://robgreenfield.tv/trashme/>

## Waste and Want

“Waste and Want: The Other Side of Consumption.”

Accessed April 07, 2018.

[https://books.google.com/books?hl=en&lr=&id=5M9IAwAAQBAJ&oi=fnd&pg=PA3&dq=homelessness+and+waste&ots=rHn-TrT5XP2&sig=E1NqS2J\\_NVGczWkXa3twxim-1b9o#v=onepage&q=homelessness%20and%20waste&f=false](https://books.google.com/books?hl=en&lr=&id=5M9IAwAAQBAJ&oi=fnd&pg=PA3&dq=homelessness+and+waste&ots=rHn-TrT5XP2&sig=E1NqS2J_NVGczWkXa3twxim-1b9o#v=onepage&q=homelessness%20and%20waste&f=false)

“How I Built a Toaster - From Scratch”

Accessed April 13, 2018.

[https://www.ted.com/talks/thomas\\_thwaites\\_how\\_i\\_built\\_a\\_toaster\\_from\\_scratch](https://www.ted.com/talks/thomas_thwaites_how_i_built_a_toaster_from_scratch)

“The American Frugal Housewife”

Accessed April 07, 2018.

<https://archive.org/details/americanfrugalho00chil>



## Waste, Thrift, and Poverty

What do we throw out and why? Basically, our waste consists of corpses, bodily waste, and, more generally, the rancid, inedible, and impure. The definition of these, however, differ by culture. More developed countries are more prone to dispose of things because they “do not want them”, or because tastes have changed, or simply because the items themselves are single use. This is, however, a relatively modern phenomenon. Not too long ago (before the industrial revolution) people could not afford to throw things away until they were thoroughly worn, and even then they often sold the materials.

**“American cities and towns no longer operate swill yards or piggeries at the city limits, but they do maintain landfills and incinerators in places that are out of way of all but the poorest citizens.”**

As larger and more complex societies, cities, and institutions began to form, it increased the need for alternatives to this form of waste disposal as well as the distances one can send their waste. In many cases, this means sending garbage, toxic waste, and recyclables to poorer regions of the world. This dynamic has been seen domestically, in the sending of more populous states’ waste to the midwest and south, as well as the sending of e-waste to Nigeria by Europe and

North America.

**“Discussions of marginal places and marginal behaviors often merge with discussions about marginal people, who abound in the evidence about disposal practices: Lars Eighner and his fellow Dumpster divers, the ragpickers of Paris, or the ‘swill children’ who once went from house to house in American cities collecting kitchen refuse to sell for fertilizer or hog food”**

The impacts of waste disposal disproportionately affect the poor, and the sorting of it is absolutely an issue of class. Disposability was once something afforded only to the wealthy. Discarding things was a way to demonstrate one’s power. Repair and thrift was the norm for those who could not afford such a lavish lifestyle, but now that rapid and cheap production has become the norm, repair has become a hobby.

**“In cultures based on hand-work, handmade things are valuable without being sanctified as art; they embody many hours”**