

How banning plastic bags could help New York mitigate climate change

May 9 2019, by Yunhai Xiong



New Yorkers use 23 billion plastic bags each year. Credit: [velkr0/Flickr CC](#)

New Yorkers use a lot of [plastic bags](#). The city of 8 million goes through 23 billion plastic bags annually. It's a stat that would've seemed unbelievable to me before I moved here until I walked out of a C-Town

grocery store with \$30 of groceries in six plastic bags. Plastic pollution is a severe environmental problem, but some have suggested that focusing on cleaning up plastic pollution is [distracting us](#) from other more challenging risks like climate change. But there are ways to combat both, and the recent [plastic ban in New York](#) sets a perfect example.

Plastic bags do contribute to [global warming](#). Plastic needs anywhere from decades up to 1,000 years to decompose, and recent research shows that plastic can release methane and ethylene early on in the decomposition process if it's exposed to ultraviolet light. Both are problematic greenhouse gases, which have a much stronger warming effect than carbon dioxide.

Low-density polyethylene—the type of plastic used in grocery bags—is the major emitter. That means the recently announced ban on [plastic bags](#) in New York can help address climate change.

However, when the plastic bags are banned, we will have to turn to other alternative choices like paper bags and reusable bags. That raises the question of whether these bags are any better.

It turns out paper bags can have a more substantial harmful impact on the environment. Because paper is made from trees, more bags means more deforestation. Life cycle assessments show that paper bags have a much higher global warming potential because the growing need for paper bags reduce the forest carbon sink. Manufacturing paper bags is much more resource intensive than plastic, consuming more energy and water. A 2014 report shows that paper bag production requires double the energy and five times as much water as plastic bags while emitting approximately three times the greenhouse gases and acid gases in the manufacturing process. Moreover, paper bags are also seven times heavier than plastic bags, which means they can come with higher transportation costs and carbon emissions.

There are also issues with reusable bags. They are usually made from cotton, which requires not only abundant water but also more energy to produce, meaning higher [carbon dioxide](#) emissions. A cotton bag needs to be reused 131 times before it yields more climate benefits than single-use plastic bags. To generate the maximum environmental benefit in using reusable bags, many consumers will need to change their behavior. If they forget to bring their bags when they shop, then not only will it cost them money to buy another bag but it will lead to more wasted [carbon emissions](#) and resources.

To help nudge people to bring reusable bags, New York has suggested charging a fee of 5 cents on every paper bag. Without the extra cost, paper bags might be the alternative choice for the plastic bag, which could end up making climate change and other environmental issues worse.

While the [plastic](#) bag ban can be good for the environment, the policies need to be carefully considered to ensure its effectiveness. And whether the legislation really works to address these issues still depends on everyone's actions. If the new policy can successfully transform New York residents' shopping behavior, it could be a significant step for leading the way in mitigating [climate change](#) and [plastic pollution](#).

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