

**FALSE NARRATIVE:** In a new report that rightly points out the many issues we face in dealing with fossil-fuel-derived traditional plastics, Greenpeace has decided to preemptively dismiss bio-based plastics as a viable alternative, while misleading readers on their merits.

**NOT TRUE:** The terms "biodegradable" and "compostable" have distinct meanings and distinct implications for how materials should be disposed of after use. It's true that there is some confusion in the public. But the answer to this is a good faith effort to inform consumers, not to discourage them by dismissing the environmental virtues of next-generation materials.

**OVERSIMPLIFIED:** There are a number of plants that can be used to create bioplastics, including potato, rice, wheat, and others. But food crops are not the only source of bioplastics; other plants can also be used as a bioplastic feedstock.

**FEAR-MONGERING:** Bioplastics production will not have a significant impact on agricultural resources used to grow food. Both the United Nations' Food and Agricultural Organization and the World Wildlife Foundation's Bioplastic Feedstock Alliance affirm the research showing that bio-based materials should ultimately be supported, while acknowledging the need for nuanced policy considerations about how resources are allocated.

**STRAW MAN:** Producers of bio-based products and packaging do not make these claims. This is an argument for educating consumers and improving our waste management systems, not for dismissing bio-based products.

**WE AGREE, BUT...** This shouldn't discourage us from moving toward bio-based materials as part of the solution. We advocate for rapidly developing the nation's composting capacity and infrastructure, through grants, financing, or private-public partnerships, or other appropriate means. With a program like this, we can divert compostable municipal waste from landfills to value-adding composting facilities that will improve soil health, water quality, carbon storage in soil, and reduce the need for fertilizers. Compostable packaging also promises to streamline waste streams so far more organic matter is composted, which would reduce landfill emissions of methane.

## SECTION 3

### GREENPEACE

### FALSE IMPRESSIONS: "BIOPLASTICS" - THE LATEST FORM OF "GREENWASHING"

In response to growing public concern over conventional single-use plastics, many companies are swapping single-use plastics derived from fossil fuels with bio-based plastics, which are often erroneously promoted as biodegradable or compostable. Several companies—for example, Coca-Cola, Danone, Nestlé, PepsiCo,—are using bio-based plastics to replace some portion of conventional fossil-derived plastics in their beverage bottles, and many bags or disposable take-away food service items (cutlery, plates, etc) are increasingly marketed as "biodegradable." These terms can be confusing for customers, especially when generic "greenwashing" terms such as 'eco', 'bio' or 'green' are used for marketing advantage. The word "bioplastics" does not have a standardized definition and is often used to refer to plastic that is either **bio-based, biodegradable** or **compostable** and can even include fossil fuel based plastic.

'Bio-based plastic' refers to plastics made not from fossil fuel building blocks but from plant material, such as corn or sugar cane. Bio-based plastic only represents about 1% of the plastic available on the market. Though research is underway to increase the amount of bio-based material, currently most bio-based plastic is still partially composed of fossil-based plastic. For example, the NaturALL bottle used by major beverage companies is currently 30% bio-based plastic, and 70% fossil-based plastic.

The majority of bio-based plastic is derived from agricultural crops, which compete with food crops, threatening food security and driving land use change and agricultural emissions. Globally, the production of agricultural commodities is the leading cause of deforestation and habitat destruction, and agricultural crops, forestry and other land uses are responsible for a quarter of the greenhouse gas emissions globally. A growing share of agricultural land is used for nonfood crops, mostly farmed on large industrial plantations which displace both natural habitat and small-scale farmers. While some FMCGs like Unilever have made commitments to ensure that their bio-based plastic comes from sustainable sources, the commonly-cited Bioplastic Feedstock Alliance is not a third-party certification standard. While many consumers may believe that all biobased plastic will naturally decompose if littered or landfilled, this is not necessarily true. Both conventional fossil-based plastic or bio-based plastic can be engineered to degrade under certain conditions; these are known as either **degradable** or **biodegradable plastics**. However, the heat and humidity conditions required are rarely, if ever, met in the natural environment, and when that biodegradable plastic does break apart, it may not fully disappear but instead fragment into smaller pieces, including microplastics, which can be ingested by animals and enter the food web.

The impression that these products are more 'natural' because they are from plants is also false: production of bio-based plastic can involve similar chemical additives to conventional fossil-based plastic.

**Compostable plastic:** Another confusing marketing term associated with bio-based plastics and biodegradability is the claim that a disposable item is compostable. Compostable plastic is engineered to fully decompose (as opposed to breaking into small fragments) under certain conditions that are met in either **industrial composting facilities**, or, less commonly, in home composting systems. But not all municipalities have industrial composting, and many cannot recycle compostable plastic packaging, and thus it is most likely to be landfilled or incinerated, making it little different to conventional single-use plastic.

While some new technologies promise biobased packaging made from non-agricultural crops like algae, methane or seaweed, these are emerging technologies and processes and will require transparent assessments on a range of impacts. Some bio-based packaging materials that are grown according to agroecological farming principles or make use of local agricultural waste or by-products may be a component of an overall plan to eliminate single-use plastic packaging, provided these materials do not compete with land for food crops or soil fertility needs; for example, in tropical areas, food products may be wrapped in banana leaves. Overall, a highly precautionary approach to industrially-processed bio-based plastic packaging should be taken.

**MISLEADING:** While "greenwashing" is certainly a real phenomenon, to dismiss bio-based plastics as a mere marketing ploy is both uninformed and unproductive. Any objective look at the underlying technology reveals the many ways in which these materials are environmentally responsible alternatives to legacy plastics.

**WHAT GREENPEACE OMITS:** There is a wide range of plastics that can be made from plants that do not include fossil-based inputs, including those made from polylactic acids (PLAs) and polyhydroxyalkanoates (PHA). These plastics are made from renewable biomass that often can be turned into soil-enriching compost at the end of their use.

**HERE ARE THE FACTS:** Based on FAO statistics, the total land use for bioplastics production is only 0.0049% of global agricultural land, and the estimated land use for 2021 under current trends would be approximately 0.0099% of global agricultural land.

**RIGHT...** Which is why these products are clearly labeled with proper disposal instructions.

**NOT EVEN CLOSE:** Not only do compostable materials have a positive environmental impact, they present economic benefits as well. It is much more affordable to compost these materials than to landfill them. And, according to the ISLR, "on a per-ton basis, composting a ton of waste sustains four times as many jobs" as sending that ton of waste to a landfill or incinerator. The EPA also estimates that composting operations generate twice as many jobs as landfills.

**Source:**  
<https://smartasset.com/mortgage/the-economics-of-composting>

**THIS WOULD DISRUPT NEEDED CHANGE.** While we should be careful to ensure that new technologies aren't worse than their predecessors, a precautionary approach would stymie both innovation in bio-based products and remove the incentive for policy changes that would create a more robust composting infrastructure. We need to mobilize entrepreneurs and businesses to innovate solutions to the plastics crisis.