



Positive Perspectives on Recycling Plastic

Scientifically Substantiated Facts

Plastic is a versatile and durable material used in countless applications, from packaging to equipment. While there are concerns about the environmental impact of plastic waste, plastic also offers many benefits, especially when it comes to recycling. Let's dive deeper into the world of plastic with scientifically substantiated facts.



FACT 1

Paper is not a sustainable alternative to plastic.

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FACT 2

Plastic bags have a small ecological production footprint.

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FACT 3

Increased bioplastics use will raise land and water demand, impacting land competition and biodiversity.

PAGE 4



FACT 4

Recycling plastic waste is more sustainable and better for the climate than incineration for energy generation.

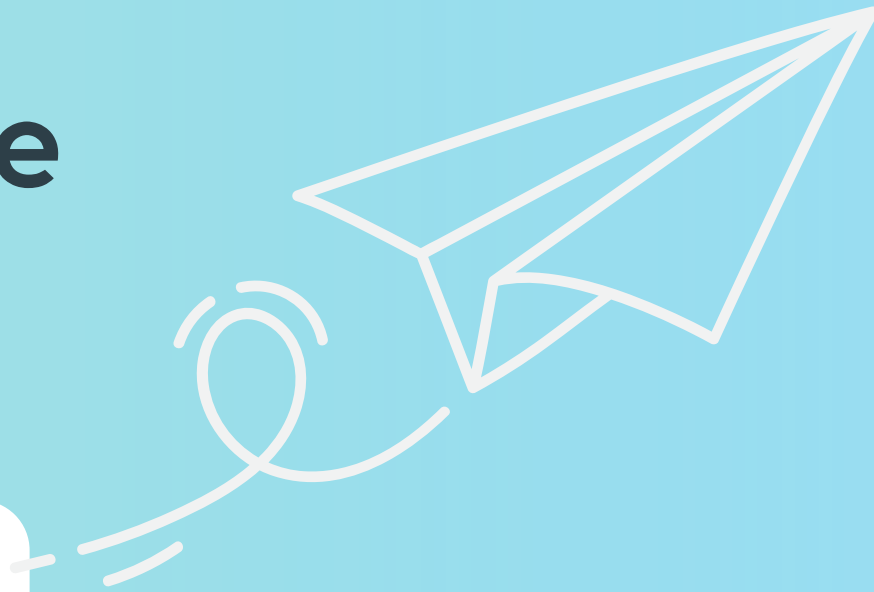
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FACT 1

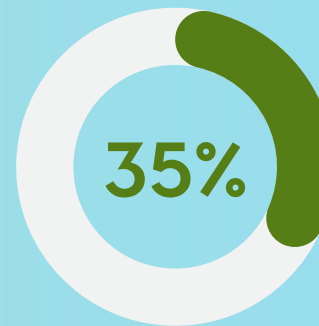


Paper is **not a sustainable** alternative to plastic.



Around 90% of paper pulp is made from wood, and paper production is responsible for about 35% of all clear-felled trees - **every year 3 billion trees are cut down globally** for paper-based packaging.

As a reaction to the environmental and socio-economic impacts associated with plastics - paper-based packaging is increasingly **marketed as a sustainable alternative**. Evidence shows however that paper-based substitutes present many new as well as similar challenges, furthermore paper is nearly always combined with plastics and chemical coatings. This composition makes recycling a very complex process.



of all trees cut down are for paper production



Every year 3 billion trees are cut down globally for paper-based packaging

Study: Disposable Paper-based Food Packaging: The false solution to the packaging waste crisis. Profundo.



Click on this icon to go to the source of the study.

FACT 2



Plastic bags have a small ecological production footprint.

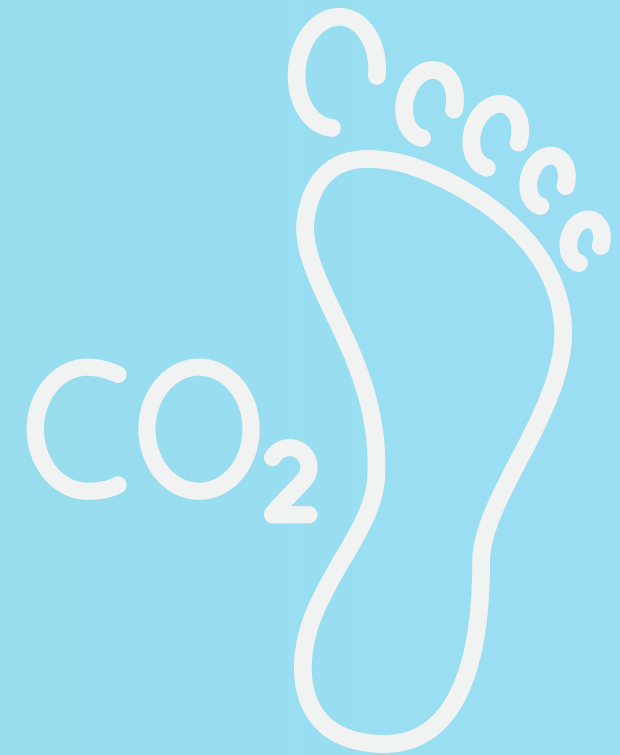
While plastic bags have a bad reputation due to their environmental impact, **they have the smallest ecological footprint in terms of production.** Paper bags are biodegradable and easy to recycle, but **their production requires a lot of water and trees.** Reusable bags, often made of cotton or non-woven polypropylene, have their own environmental challenges.

A British study found that a **cotton bag needs to be reused 131 times** to match the climate impact of a plastic bag. The most sustainable choice depends on how often and carefully bags are reused and disposed of.

Source: Paper, Plastic or Reusable? The answer is a mixed bag. Stanford Magazine.



Click on this icon to go to the source of the study.



131x

This is how many times a cotton bag needs to be reused to equal a plastic bag's climate impact.

FACT 3



Increased bioplastics use will raise land and water demand, **impacting land competition and biodiversity.**



Some environmental impacts of bioplastics, e.g., **leaching of toxic chemicals** from plastic during decomposition, **PM10 pollution** from sugar cane conversion, and **biodiversity impacts** of microplastics, are poorly studied and not well integrated into current LCA methodologies. The same applies to the impacts caused by **agrochemicals** used in agricultural production of bioplastics feedstocks. For example, **the impact of bio-HDPE on human health is estimated to be 50 times higher** and **on ecosystem quality two times higher** than conventional HDPE. The agricultural phase has been shown to be more impactful than the industrial conversion of biomass to platform chemicals within a biorefinery. Furthermore, it is best to **avoid adding cellulose-based bioplastics** to the **plastic waste stream** since they will **strongly affect** the **recycling** of sorted LDPE packaging waste.

50x

This is how many times the human health impact of bio-HDPE is estimated to be greater than that of conventional HDPE

2x

This is how many times the ecosystem quality impact of bio-HDPE is estimated to be greater than that of conventional HDPE

Studies:

1. The unintended side effects of bioplastics: carbon, land, and water footprints. One Earth.
2. Effect of Cellulose-Based Bioplastics on Current LDPE Recycling. MDPI.



Click on this icon to go to the source of the studies.

FACT 4



Recycling plastic waste is **more sustainable and better for the climate** than incineration for energy generation.



Research of the Publications Office of the European Union indicates that in the EU, **recycling plastic waste** using chemical and physical methods is **usually a better choice** than **burning it for energy**, particularly for mixed types of plastics like polyolefins. This preference is mainly because these recycling methods have a **smaller impact on climate change** and **offer more environmental benefits**, even though they might not always outperform energy recovery in some aspects. As the EU shifts towards a **cleaner energy mix**, the **benefits of recycling** over burning waste for energy are **expected to grow in all areas**. The study also points out that it's challenging to determine which is better, mechanical recycling or chemical/physical recycling. It underscores the importance of having **detailed information about the types of waste being recycled to improve recycling processes** and possibly combine different recycling approaches effectively.



Recycling plastic waste is usually a better choice than burning it for energy

Study: Environmental and economic assessment of plastic waste recycling. Publications Office of the European Union.



Click on this icon to go to the source of the study.



Why recycle plastics to help trees grow?



Although news emerged in August 2023 that the amount of plastic in the ocean is significantly lower than previously thought (3.2 million tons of plastic instead of the 50 to 300 million tons mentioned in studies), plastic waste remains a global issue that genuinely demands action. There are ongoing discussions about plastic waste and the best ways to manage it.

At GreenMax Group, we are committed to the philosophy that recycling plastic – waste that is already circulating on our planet – and converting it into products that help trees grow old healthily, is a positive way to contribute to the climate. By taking this approach, we are not only reducing the plastic waste problem, but also fostering a green, healthy and future-proof living environment.

Questions or remarks?

Contact us!

✉ info@greenmaxgroup.eu

🔗 [greenmaxgroup.eu](https://www.greenmaxgroup.eu)

☎ +31 413 294 447

[greenmaxgroup.eu](https://www.greenmaxgroup.eu)