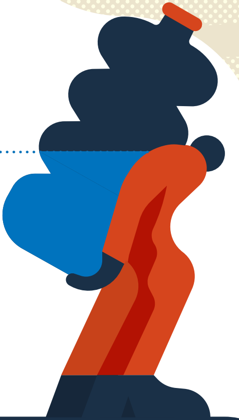
To fight plastic pollution,

BEWARE OF PLASTIC FAKE OUTS.

More than 400 million tons of plastic are produced worldwide every year.

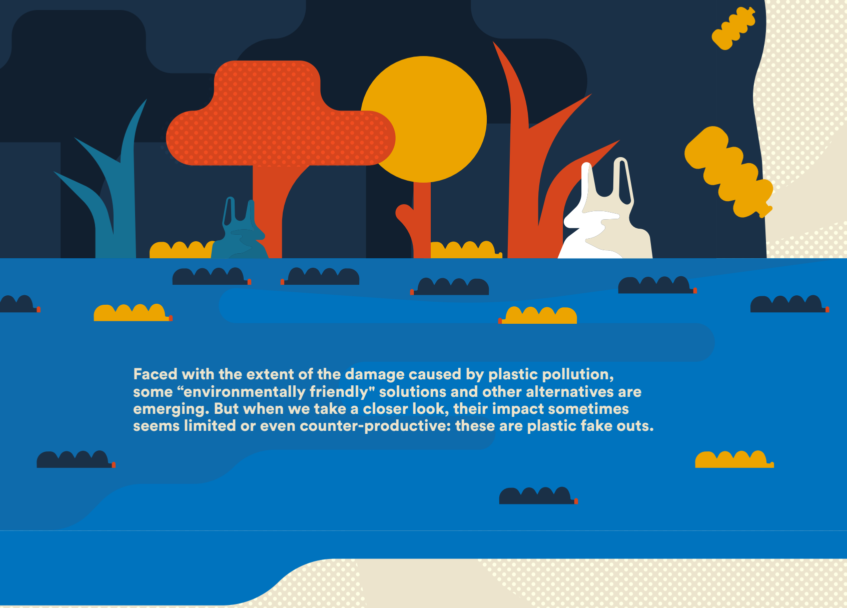
More than 1/3 of all plastics produced are single-use packaging.



In addition to the impact generated by plastics throughout their life cycle, the problem is that we still don't know how to deal with the millions of tons of plastic waste produced.

1/3 OF PLASTIC WASTE ENDS UP IN THE ENVIRONMENT EVERY YEAR

AND POLLUTES LAND, RIVERS AND OCEANS FOR CENTURIES.



Faced with the extent of the damage caused by plastic pollution, some “environmentally friendly" solutions and other alternatives are emerging. But when we take a closer look, their impact sometimes seems limited or even counter-productive: these are plastic fake outs.

PLASTIC FAKE OUT

FALLING INTO THE TRAP OF BIOPLASTICS.

As the spotlight of public and regulatory attention have become fixated on the plight of plastic pollution, the world is desperately searching for solutions. One of the ways in which this needs to happen is through design, innovation and alternative solutions to plastic packaging and unnecessary plastic products (and the accompanying systems) across the entire consumer economy.

In the past two decades, “bioplastics” have increasingly been promoted as a solution to many of the challenges caused by conventional plastics. However, far from being the ‘silver bullet’, bioplastics bring with them an equally worrisome set of issues, representing a minefield of definitions, misrepresentations, greenwashing and hidden impacts.

The word “bioplastic” deserves a small clarification since it refers to several different types of plastics :

BIO-BASED PLASTICS

They are made partially or wholly of biomass feedstock (such as corn, potato starch, wood pulp or sugarcane).

OXO (BIO)
DEGRADABLE

OXO (BIO)DEGRADABLE PLASTICS

They are conventional petroleum-derived plastics that contain additives (pro-oxidants) to induce degradation under certain conditions. However, oxo-degradable materials only disintegrate (ie. break down), with no chemical conversion taking place. This means that these materials are not biodegradable at all. There is little to no evidence that oxo-degradables are able to biodegrade any faster than conventional plastics and may even add to the problem by increasing the rate at which microplastics are produced.

BIODEGRADABLES

BIODEGRADABLE PLASTICS

They are designed to break down into CO_2, water and biomass by the action of microorganisms and fungi. However, most of the time they are designed to only biodegrade in industrial facilities under very specific environmental conditions that are rarely if ever found in the environment, even less the marine environment.

Industrially compostable plastics

They are designed to be suitable for organic recycling (i.e. biodegrade in specific environments). However, the vast majority will only do so in carefully controlled environments (industrial composters or anaerobic digesters), where moisture content, temperature, oxygen levels, and acidity are all tightly controlled. That is because many of these plastics were made to fit the European standard EN 13432 for industrial compostable products. National interpretations of what is “compostable” also vary from country to country.

Home compostable plastics

They can biodegrade in a domestic or community composting system such as in a garden where temperature and other environmental factors fluctuate and are harder to control. This process takes much longer than in an industrial composting system, and only works if the home or community composting system is well managed (e.g. stirred regularly, water added depending on weather conditions, ...).

Far from being ‘green’, most bioplastics are quite the opposite to what people expect: just like conventional plastics, they are actually made largely from fossil fuel and do not necessarily biodegrade in the environment.

A bio-based plastic IS GENERALLY NOT biodegradable ⊗

⊗ **A biodegradable plastic IS GENERALLY NOT bio-based**

What is certain is that bioplastic is not a miracle solution!

BIO-BASED

Bio-based plastics are most often fossil-based, at least partly

Bio-based plastics can contain up to

75%

of conventional fossil-based plastic

...and sometimes even more!

Bio-based plastics have a significant environmental footprint

The biomass used very often originates from an intensive and polluting industrial agriculture.

In many situations, the raw materials are sourced outside the EU and favour detrimental agricultural practices for land, water and soil such as single-crop farming and important pesticides use.

Their production in important quantities would raise similar issues to the production of biofuels:

A MONOPOLIZATION OF CULTIVATED LAND THAT COMPETES WITH HUMAN FOOD AGRICULTURE.

+

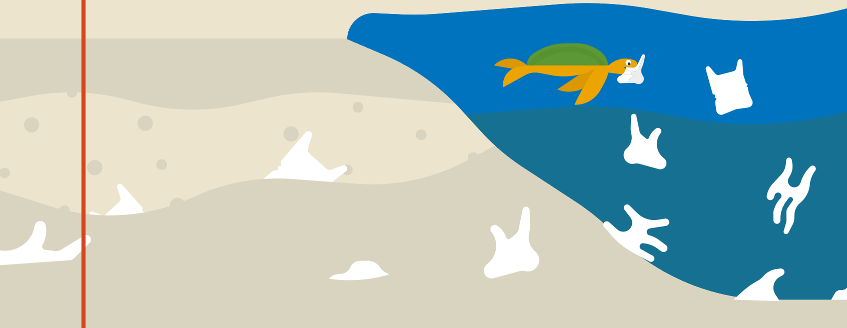
INCREASED PRESSURE ON THE LAND LEADING TO WATER SHORTAGES, SPECIES EXTINCTION, LAND DESERTIFICATION AND LOSS OF NATURAL HABITATS.

BIODEGRADABLE

Biodegradable plastics do not degrade in the natural environment...

Most of the plastics known as biodegradable are not biodegradable under conditions which one finds in the environment but in industrial composting facilities: temperature of more than 50° + a strong rate of moisture + the presence of the adequate micro-organisms.

British researchers have observed the decomposition of what they thought were biodegradable plastic bags in the natural environment. 3 years later, they were found buried in soil and water and still in very good condition - indicating that these bags were designed to be industrially composted at best.



If they end up in the natural environment and in the ocean, marine life and birds have plenty of time to get entangled or ingest these plastics before they degrade. And during the degradation process, they break down into micro-particles that pose an even greater danger to ocean life.

Biodegradable plastics impact the waste stream:

Very few communities are equipped with industrial composters and the collection of bio-waste is not generalised everywhere in Europe. We thus pay more for a product which in reality is neither collected separately, nor treated adequately. What's more, when collection is mixed, or if biodegradable plastics end up in the recycling stream by mistake, they are treated as an impurity in the recycling of conventional plastics.

BIOPLASTICS

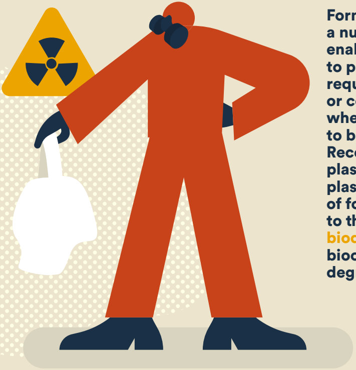
Bioplastics are mainly single-use

Fundamentally, biodegradable plastics are materials intended for single use as they are designed to reach their end-of-life stage in a rather short period of time. As for bio-based plastics, they do not hold any end-of-life specificity or benefit compared to 'conventional' plastics: they are just as persistent, yet so far have largely been proposed only as a single-use alternative to single-use conventional plastics.

Bioplastics contribute to global warming

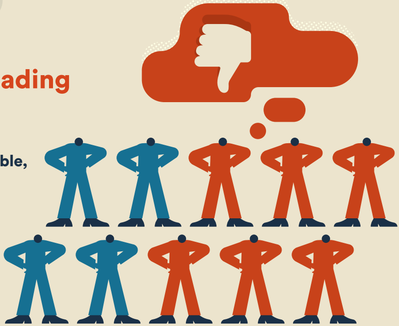
To transform raw materials into both so called biodegradable and bio-based plastics, a manufacturing process is involved which is energy intensive and takes place in factories around the globe which release a lot of greenhouse gases.

Bioplastics contain hazardous substances



Formulating plastic polymers requires a number of additives, ranging from enabling the polymerisation process itself, to providing the plastic with certain required functionalities such as strength or color. This is the case regardless of whether the plastic is bio-based or designed to be biodegradable or compostable. Recent studies show that bio-based plastic can be as toxic as conventional plastic, and more than certain types of fossil-based plastic. In addition to that, toxicological studies have shown biodegradable plastics often include biocides to protect them from premature degradation by microorganisms.

Bioplastics are misleading



The general public has no idea of the differences between plastics labelled as bio-based, biodegradable, compostable, home compostable or even oxo degradable.

In a survey run in Germany, close to **60%** of respondents thought that all bioplastics were compostable.

Labelling a product as biodegradable is one of the factors that would be more likely to result in littering behaviour. In an intercept survey conducted in the United States to better understand youth littering behaviour, participants were reported a greater likelihood to litter when the item is biodegradable.

Bioplastics can mislead consumers into thinking they're doing good by opting for products or packaging branded as being ‘bio’. This misconception has been exploited by the industry. In recent years, the labelling of plastic products as bio has grown massively and this should be tackled by appropriate legislation at all levels.

“Bioplastics” are mainly a distraction to the real solutions to the plastic crisis. Instead of looking into replacing one single-use item by another, the focus of our collective action should be on reducing resource use, redesigning products production, delivery and consumption systems and scaling-up reuse.

What can we do?!

WHAT SHOULD BE DONE AT POLICY LEVEL?

AT EU LEVEL,

the upcoming initiatives on sustainable products, green claims, on the use of bio-based plastics, and biodegradable or compostable plastics and the revision of the packaging and packaging waste directive provide an opportunity to:

1 **Prioritise material reduction and reuse**

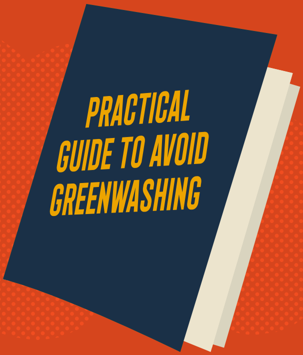
Over substitution of one single-use item with another, for example by setting sectoral reuse targets.

STRONG CRITERIA

2 **Set strong criteria and conditions for the sourcing and**

use of bio-based and biodegradable plastics

fully acknowledging and taking into account all their externalities.


PRACTICAL GUIDE TO AVOID GREENWASHING

3 Harmonise the definitions and strengthen consumer protection against greenwashing on plastics

Set clear definitions of bio-based, biodegradable and compostable plastics, and regulate the use of marketing green claims such as “bioplastics”, “biodegradable”, “compostable” and any qualitative claims linked to the environment, including on feedstock source, biodegradability and compostability through a pre-approval process.

4 Adopt strong EU standards

Introduce clear and ambitious requirements into EU standards on industrial compostability, home compostability and biodegradability for example that reflect real-life conditions and do not adversely impact natural ecosystems.

AT NATIONAL LEVEL, countries should:

5 Comply with the EU single-use plastics Directive

when transposing the Directive into national law by reducing comsumption and removing from the market all single-use plastic items laid down in annex B of the Directive by July 3rd 2021, including their biodegradable and bio-based versions as required by the Directive.

6 Question unnecessary plastics and packaging and support reuse alternatives, packaging free and refill systems

notably through policy measures and economic incentives.
For e.g, remove all exemptions from measures on plastic bags by banning all single-use bags – including single-use bio-based and biodegradable plastic bags as well.

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