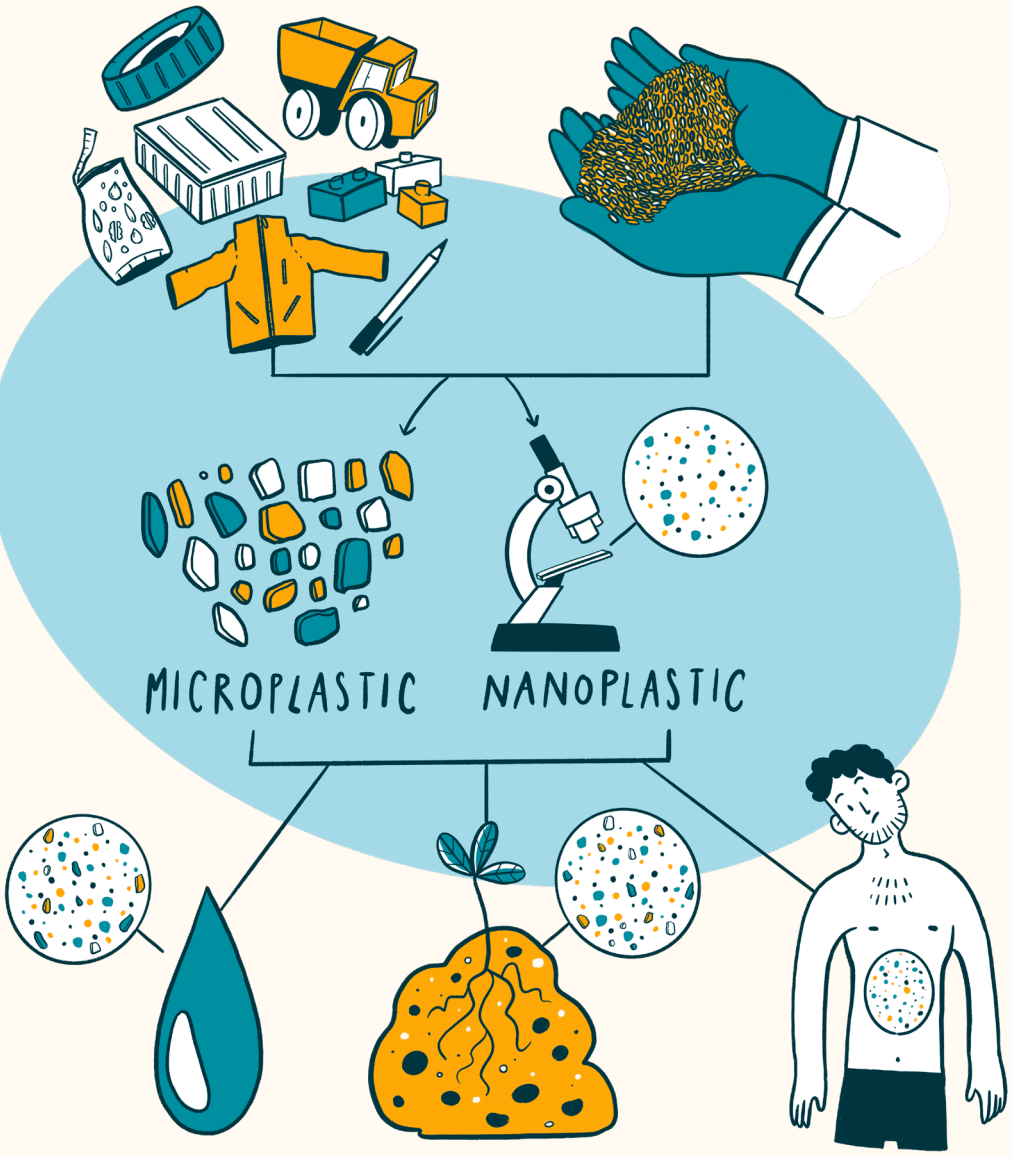
Plastic - The (in)Visible Pollution

Plastic pollutes more than what the human eye can see



Plastics have become ubiquitous in our modern world and plastic pollution has reached all corners of the planet, including the most remote areas.

You probably have seen many images of plastic products piling up in nature or harming animals, but did you know that plastic is responsible for a much wider pollution than what we can actually see?

Plastic and the invisible pollution

Plastic pollution is not limited to the visible pollution from macroplastics such as packaging or fishing gear. There is also an invisible pollution associated with plastic:

Emissions from petrochemical sites, plastic production plants, incinerators and landfills pollute the air and impact the health of surrounding communities and ecosystems. Toxic substances emitted during the production process also pollute the soil and the water, with impacts on the food we grow and water we consume, as well as on biodiversity.

More than 16,000 chemicals are used in plastics, of which more than 4,000 are considered hazardous and close to 11,000 have not even been assessed for their safety. Of the 4,000 hazardous chemicals, only 128 are actually regulated by law. These chemicals, including bisphenols (e.g.BPA), phthalates and PFAs can leach from plastic into food (in the case of food packaging) and the environment, impacting environmental and human health. Similarly, toxic chemicals are also present in - and leach from - so called “bioplastics”, i.e. bio-based plastics and biodegradable plastics.

Another major source of invisible plastic pollution is microplastics and nanoplastics, which come from the use and degradation of macroplastics (e.g. packaging, textiles, toys, artificial playground and sport surfaces, tyres, agricultural mulches, construction materials, fishing and aquaculture gear) or are directly added into products such as cosmetics and paints. As they are very small and light (below 5 mm for microplastics and below 1µm for nanoplastics), they easily make their way into the environment, notably water, soil and air, as well as into our bodies.

In addition, each year in the EU, an estimated 184,000 tonnes of plastic pellets (also called nurdles) are lost and pollute the environment, particularly oceans, waterways and coastlines. Plastic pellets, the building blocks of any plastic product, are the size of a lentil, barely visible to the eye individually. Due to negligence and ineffective handling measures, they spill out at plastic manufacturing plants, during storage and transport on land and at sea, as well as at recycling facilities.

Pellet pollution impacts animals who mistake the nurdles for food and, from there, also contaminate the food chain; it also directly contributes to chemical pollution as these pellets contain harmful chemicals. In addition to chronic losses during manufacturing, handling and transport, major pellet spills due to road or maritime accidents are unfortunately frequent, with disastrous consequences on the local environment and biodiversity, as seen on the shores of Spain in late 2023 and France in 2022.

What does it mean for Europeans?

The various forms of pollution associated with plastic production, use and disposal impacts Europeans directly. We are directly ingesting, inhaling micro and nanoplastics and indirectly being contaminated through the air, soil and water across Europe.

PFAs, a group of thousands of chemicals currently used in a wide range of products such as plastic packaging, synthetic textiles and smartphones, are linked to cancers and negative impacts on the immune, reproductive and endocrine systems. In 2023, the Forever Pollution Project revealed widespread PFAs pollution across Europe with more than 17,000 sites contaminated, and another 21,000 sites likely polluted. PFAs are called “forever chemicals “ because they are the most persistent chemicals known so far and hardly degrade in the environment, meaning they impact us today but also the generations to come.

Reducing plastic production and consumption would largely contribute to reducing the chronic and widespread pollution of various ecosystems, protecting human and environmental health. The EU must adopt binding measures to reduce plastic production and consumption, starting with single-use, short-lived and non-essential plastic products, eliminate harmful chemicals such as PFAs and prevent microplastic emissions and pollution at the source.

Resources to go further

The Forever Pollution Project

PlastChem - the state of the science of hazardous chemicals in plastics - The Research Council of Norway (2024)

Breathing Plastic : The Health Impacts of Invisible Plastics in the Air - CIEL (2023)

Nurdle pollution map - Fidra (2024)

Tiny Plastic, Big problem : the case for preventing pellet pollution - Rethink Plastic alliance (2023)

How can the EU legislation tackle microplastic pollution - Rethink Plastic alliance (2022)

Support the campaign with #PlasticsAndEU

Find out more at www.breakfreefromplastic.org/plastics-and-EU