Plastics crisis:
challenges, advances and relationship with wastepickers.

Illustrated booklets

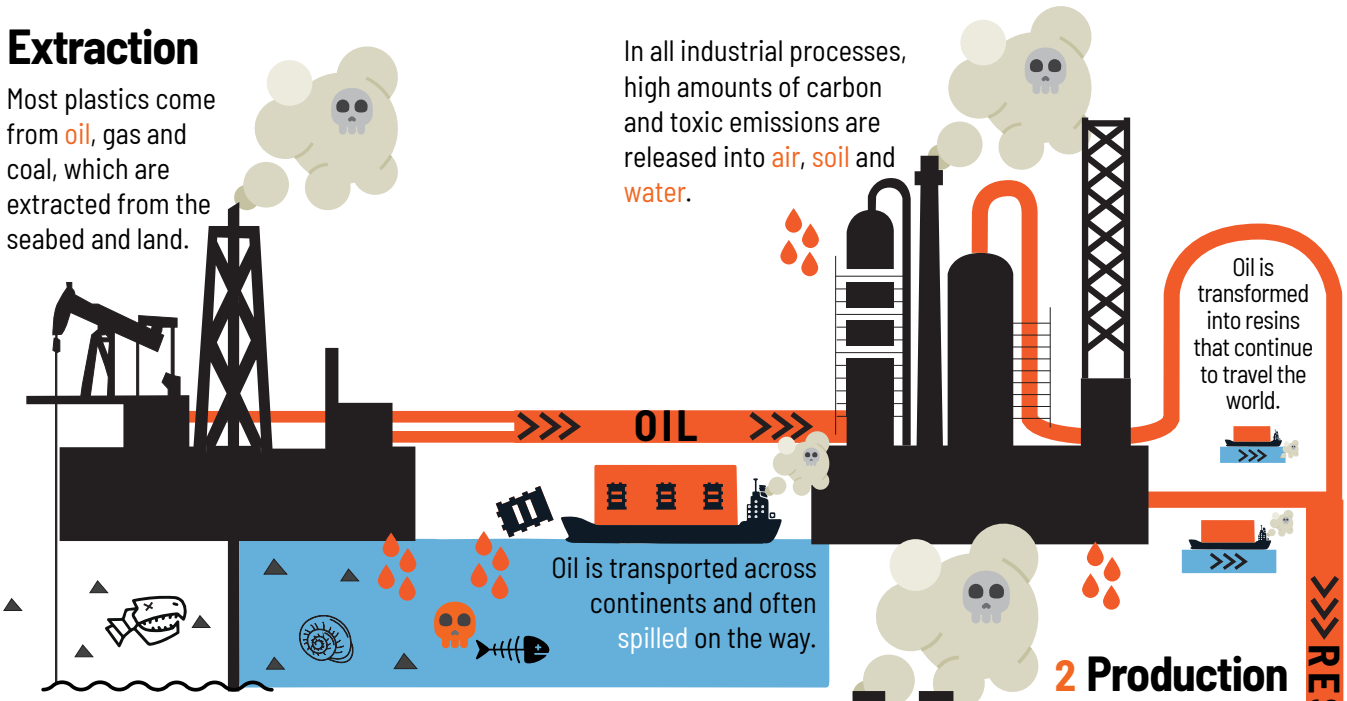
Plastic Life Cycle

and the globalized socio-environmental crisis

1 Extraction

Most plastics come from oil, gas and coal, which are extracted from the seabed and land.

In all industrial processes, high amounts of carbon and toxic emissions are released into air, soil and water.



2 Production

Resins are used to produce all kinds of items. Here, toxic additives are added to increase color, flexibility and resistance to fire and ultraviolet rays.

3 Consumption

When consuming the products with plastic, we also consume the toxic additives they contain. That puts our health at risk.

4 Discard

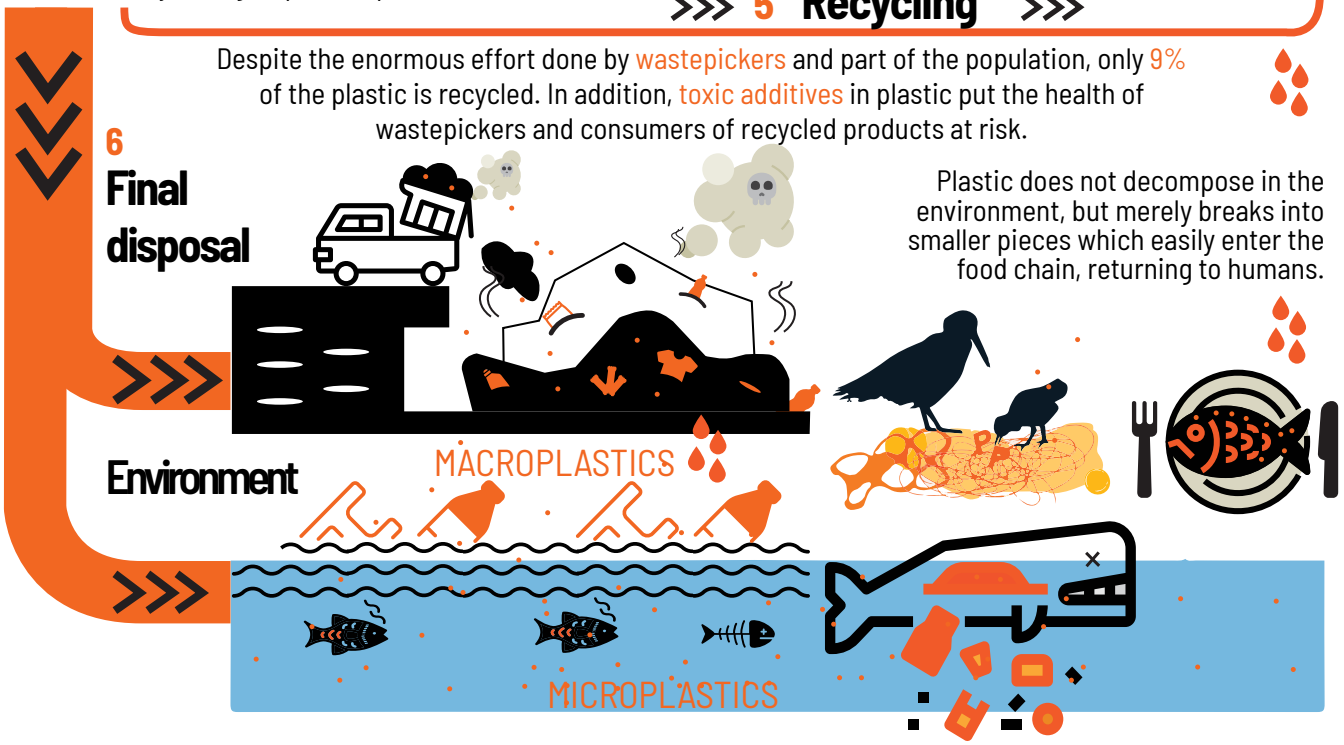
Each day, millions of tons of plastic are discarded because the industry has found that it earns more by selling disposable products.

5 Recycling

Despite the enormous effort done by wastepickers and part of the population, only 9% of the plastic is recycled. In addition, toxic additives in plastic put the health of wastepickers and consumers of recycled products at risk.

6 Final disposal

Plastic does not decompose in the environment, but merely breaks into smaller pieces which easily enter the food chain, returning to humans.



THE PLASTIC CRISIS

Why is there a plastic crisis?

Because plastic products are not biodegradable, are designed to have a very short useful life, and are consumed by billions of people, they generate enormous amounts of waste that remains hundreds of years in the environment. In addition, industrial plastic production grows year by year and all stages of the plastic life cycle have serious socio-environmental impacts, such as:

1 Oil **Extraction** is done by drilling the ground on land or under the sea, using techniques such as fracking that injects hundreds of toxic substances into the soil. Then, the hydrocarbons are transported to all continents and every year there are large spills that produce serious environmental impacts on aquatic and terrestrial ecosystems.

2 In **Production**, resins are mixed with toxic chemicals, which put the health of workers in factories and nearby communities at risk because they pollute the air, soil and water.

3 During the **Use** of plastic products health is put at risk because the added toxic substances are released during their useful life. Currently, users are unaware of these risks, which especially affect women and children, including developmental problems and other problems, caused by hormone disruptor present in plastic toys and food or beverages wrapped in plastic.

4 Sooner rather than later, plastic products end up being **Discarded** and transformed into waste. The disposal of plastic waste is the moral responsibility of the industries that designed and put on the market certain products. Many of the objects around us today should not exist, because they are dangerous to life on the planet.

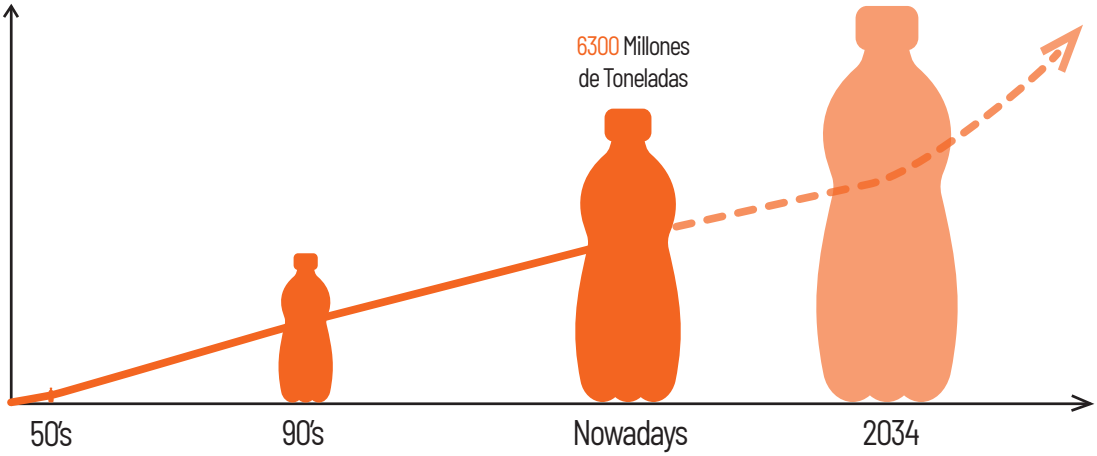
5 **Recycling** is an industrial process and therefore generates industrial waste. When recycling plastic, the toxic additives it contains remain, either in the new product made of used plastic, or in the industrial waste from the recycling process that ends up being transferred to water, soil or atmosphere. In addition, most plastics are not effectively recyclable.

6 In **Final disposal** for plastic often consists of burning it, which releases toxic emissions and greenhouse gases, or burying it in landfills and dumps. However, large quantities escape to the environment.

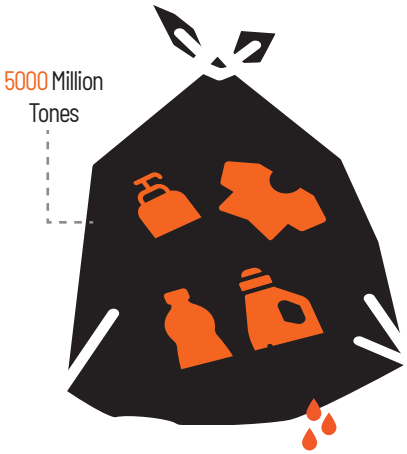
Whether it is recycled, buried or dispersed in nature, plastic remains hundreds of years in the environment, because it is a completely artificial material and is not broken down by nature. Animals of all kinds die from becoming entangled with plastic objects, or drown trying to eat plastic objects that clog their respiratory and digestive systems, or the ones that manage to eat it die of malnutrition. In addition, plastic does not disappear, on the contrary, it breaks into small pieces known as microplastics, generating problems that are still unknown and that affect the development of the reproductive and immune systems.

PLASTIC PRODUCTION

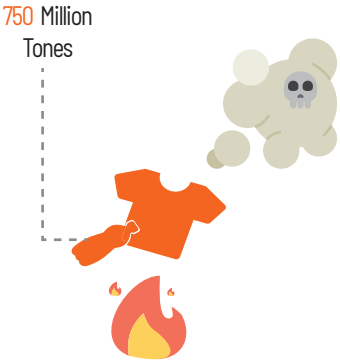
Since the **50's**, global plastic production has increased more than **20 times** and everything indicates that it will double again by **2034**, if measures are not taken to regulate the complete life cycle from the conception and design of plastic.



Of all that plastic that **has already been produced,** it is estimated that **79%** has accumulated in landfills and in the environment, **12%** was incinerated and only **9%** was recycled.



Plastic in landfills and in the environment slowly breaks down and microplastics end up in soil and water



Incinerated plastic pollutes the air and aggravates global warming

From the recycled plastic, only **1%** is transformed into products that can be recycled again. The rest has as an inevitable destiny to become garbage

THE CROSS-BORDER OF PLASTIC:

The rich countries of the **Global North** have high rates of waste segregation for recycling, but they only recycle plastic that is cost-effective, such as PET. The rest is exported to low-income countries in the Global South including Southeast Asia, Latin America and Eastern Europe. Only a small part of the plastics that arrive into those countries are used for recycling, and the rest ends up being dumped in illegal landfills, buried, burned or co-incinerated in cement plants.

TOXIC ADDITIVES IN PLASTIC

BISPHENOL A

It is found in beverage bottles, food containers, tickets with thermal printing, etc. It has effects on brain development and behavior, reproductive health, is associated with breast, prostate, ovarian and uterine cancer.

PHTHALATES

They are used to increase flexibility and reduce the brightness of products such as PVC, food and drink containers, toys, etc.

PERFLUORINATED COMPOUNDS

They are found in food wrappers, paints, waterproof clothing, etc.

Phthalates and perfluorinated compounds are disruptors of the immune system, liver and thyroid functions. They are related to low birth weight, impaired puberty, increased risk of breast cancer, are associated with cancer of the kidney, testicles, prostate, ovaries and non-Hodgkin's lymphoma.

ALKYLPHENOLS

They are found in PVC and styrofoam among other names. Related to male infertility, low sperm counts, disruption of prostate development, male and female breast cancer when exposed in their jobs.

BROMINATED FIRE RETARDANTS

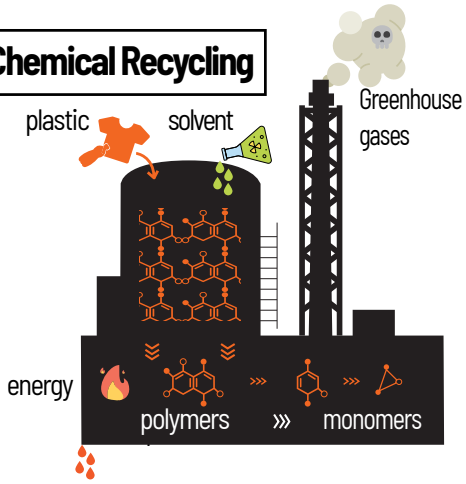
They are found in toys, recycled plastics, electronics, etc. They are disruptors of reproductive development in men and women, alter the development of the thyroid and affect the development of the nervous system.

HEAVY METALS SUCH AS LEAD AND CADMIUM

Both substances especially affect children, generating problems in the development of the nervous system, digestive disorders, anemia, low IQ. More than 100 micrograms of lead per deciliter of blood can cause death. Cadmium damages the body's organs and can lead to cancer.

THE FALSE SOLUTIONS
AND THE BUSINESSES THAT AIM TO END POLLUTION

Chemical Recycling



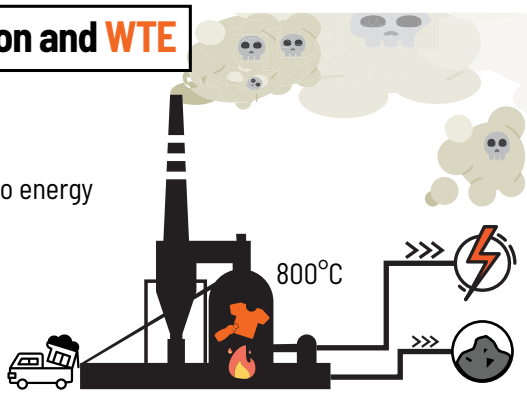
Chemical recycling is a process that breaks plastic down into monomers using high amounts of energy and generating more pollution.

The obtained product is highly contaminated with toxic substances, including dioxins (carcinogens).

The high levels of pollution in the product make it difficult to produce plastic with it, so it is used as fuel (it burns) in places where air emissions are not regulated.

Incineration and WTE

WTE = waste to energy



Emissions into the atmosphere contain toxic substances such as dioxins, furans and heavy metals that remain in the environment for hundreds of years and bioaccumulate in the body of living beings.

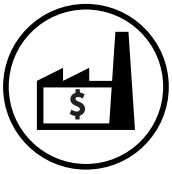
The electricity generated with WTE systems is the most expensive and pollutanting of all power generation technologies.

Produces extremely toxic ash that must be disposed of in safety landfills.

Net zero plastics and plastic neutrality

"Net zero plastics" rely on fairytale technologies like carbon capture and storage.

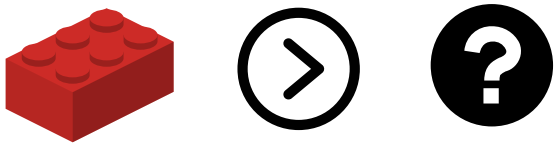
"Net zero plastics" would displace food crops to grow feedstock for plastics.



"Plastic neutrality" provides companies license to increase plastic pollution by claiming it is reduced elsewhere.

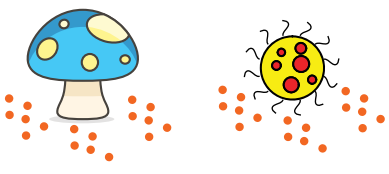
These schemes all aim to perpetuate increasing plastic production and pollution.

Ecobricks and plastic wood



The construction with plastic only delays its release to the environment, but in the future, we do not know how it will be treated. It also gives a false idea of safe utility of the discarded material.

Bacteria that eat plastic?



Large amounts of bacteria or plastic-eating fungi would be needed to remove all the plastics that exist, and this could unbalance ecosystems.

THE FALSE SOLUTIONS

MORE DETAILS ABOUT **THE BUSINESSES** THAT AIM TO END WITH POLLUTION

Due to the urgency to solve the plastics crisis, the industry promotes false solutions which aims to do more business with pollution using discarded plastics as raw material to feed other industrial processes. In general, these systems generate more pollution and do not address the causes of the problem, such as: poor design and overproduction.

The false solutions include:

1 **Chemical recycling**. It uses technologies such as pyrolysis that heat plastics without oxygen or add solvents, so that they break it down into their most basic components: **monomers**. These components could be used to make more plastic, but they are so contaminated with toxic substances that they need cleaning processes that require more energy, emit more greenhouse gases and generate new waste that is even more toxic and difficult to handle. Therefore, plastic transformed with chemical recycling is used as fuel, that is, **it burns** and must be mixed with other purer fuels to meet quality standards for use in engines.

2 **Incineration**. It burns plastics and other waste into ash, gases and particulate matter. Ash is very toxic and must be deposited in secure landfills. The gases and particles that enter the atmosphere contain dioxins, furans and heavy metals that remain in the environment for hundreds of years and bioaccumulate in the body of living beings. In addition, they biomagnify, increasing their concentration by passing from vegetables to animals in the feeding process and babies are the ones who receive the most concentrated doses through breast milk. Sometimes the heat from incineration is harnessed in a turbine to produce electricity, but the efficiency is at least 20 times lower than the energy saved through mechanical recycling of plastics and the environmental and economic cost is very high compared to other electricity generation alternatives.

3 **Net Zero**. Countries have commitments to reduce the consumption of fossil fuels (oil and other hydrocarbons) and their greenhouse gas emissions, limiting global warming. That's why the petrochemical industry is looking for other ways to continue enriching itself with oil, thinking about the production of plastics as a way to save its businesses. These industries say that they will produce plastic using clean energy and that is why plastic will be zero emissions. They also claim that the use of plastic as a fuel will reduce the use of fossil fuels. But plastics themselves are made of hydrocarbons. There are international emissions trading systems, which allow the plastics industry to pay other companies to reduce emissions for them, or plant trees to absorb the CO_2 they emit. But, trees take dozens of years to grow and store the carbon that is released today, and emissions trading systems only allow industries to continue emitting huge amounts of pollutants. Even if plastic is made from other sources such as vegetables, it still contains carbon that will be released when discarded and the same toxic additives are added to it as to plastic made from hydrocarbons.

Therefore, none of these promises work and **the only real solution** is the reduction of production and the design of products without toxic additives, that are made to be **reusable**, **repairable** and **durable**.

THE GLOBAL PLASTIC TREATY
TO CONTROL ITS COMPLETE LIFE CYCLE

UNEA

UNEA is the United Nations Environment Assembly, is a global forum of governments with the participation of more than 170 countries

In March 2022 it was decided to start drafting the treaty to control plastics in the world

The global plastic treaty should:

- End plastic pollution in all ecosystems and not just at sea;

- Be legally binding for the countries that sign it;

- Consider the complete life cycle of the plastic: extraction> production > consumption > disposal;

- Count on financial, technical and scientific support;

- Be open to include measures to address impacts on climate, toxics and health.

In relation to wastepickers the global treaty should:

- Ensure a just transition for waste pickers that includes ample remuneration, legal and social recognition of their status as workers.

- Value their knowledge that includes: operation and management of systems for the collection and recovery of materials, environmental education, research and training.

- Ensure that the wastepickers' voice is heard as crucial participants in discussions on options to improve plastic waste management and prevention systems.

- Provide national and municipal policies to guarantee rights and economically recognize the work of reclaiming and recycling plastic made by wastepickers.

THE GLOBAL PLASTIC TREATY

It is essential to regulate the **complete life cycle of plastics** to solve the socio-environmental crisis generated by this material. That is why for years, dozens of organizations, including GAIA, have been promoting the adoption of a global treaty that covers all plastic products from extraction to final disposal.

In March 2022, the fifth United Nations Environment Assembly, UNEA, was held, the global forum where member governments of the United Nations make decisions on environmental matters. There, more than 170 countries agreed to begin drafting a global treaty regulating the full life cycle of plastics.

WASTEPICKERS HAVE GAINED SIGNIFICANT SPACE IN THE FUTURE OF THE PLASTICS TREATY NEGOTIATIONS

The participation of representatives of grassroots **wastepicker's organizations at UNEA 2022** was very important to achieve the common objectives of the coalition, which promote a plastics treaty that is in line with planetary needs. The coalition was very important to achieve a plastics treaty that is in line with planetary needs and social and environmental justice. Among these objectives is the recognition of the **historical work** of those who have recovered more materials and in the most efficient way: the wastepickers. Not only the amount of materials they have recovered is valuable, but also the knowledge they have developed about their craft. All this learning must be valued and used to develop new and better plastic recovery systems, while doing justice to the benefits that recyclers have generated in society, the environment and the economy.

For these reasons, the continued participation of grassroots wastepickers' organizations around the world is crucial for achieving a global treaty that is efficient in solving the plastics crisis. This treaty, in addition to being efficient, must be fair to the communities and sectors that until now have assumed the burden of pollution, among which are the wastepickers.

FOR A JUST TRANSITION FOR WASTEPICKERS!