
CLIMATE CHANGE
AWARENESS
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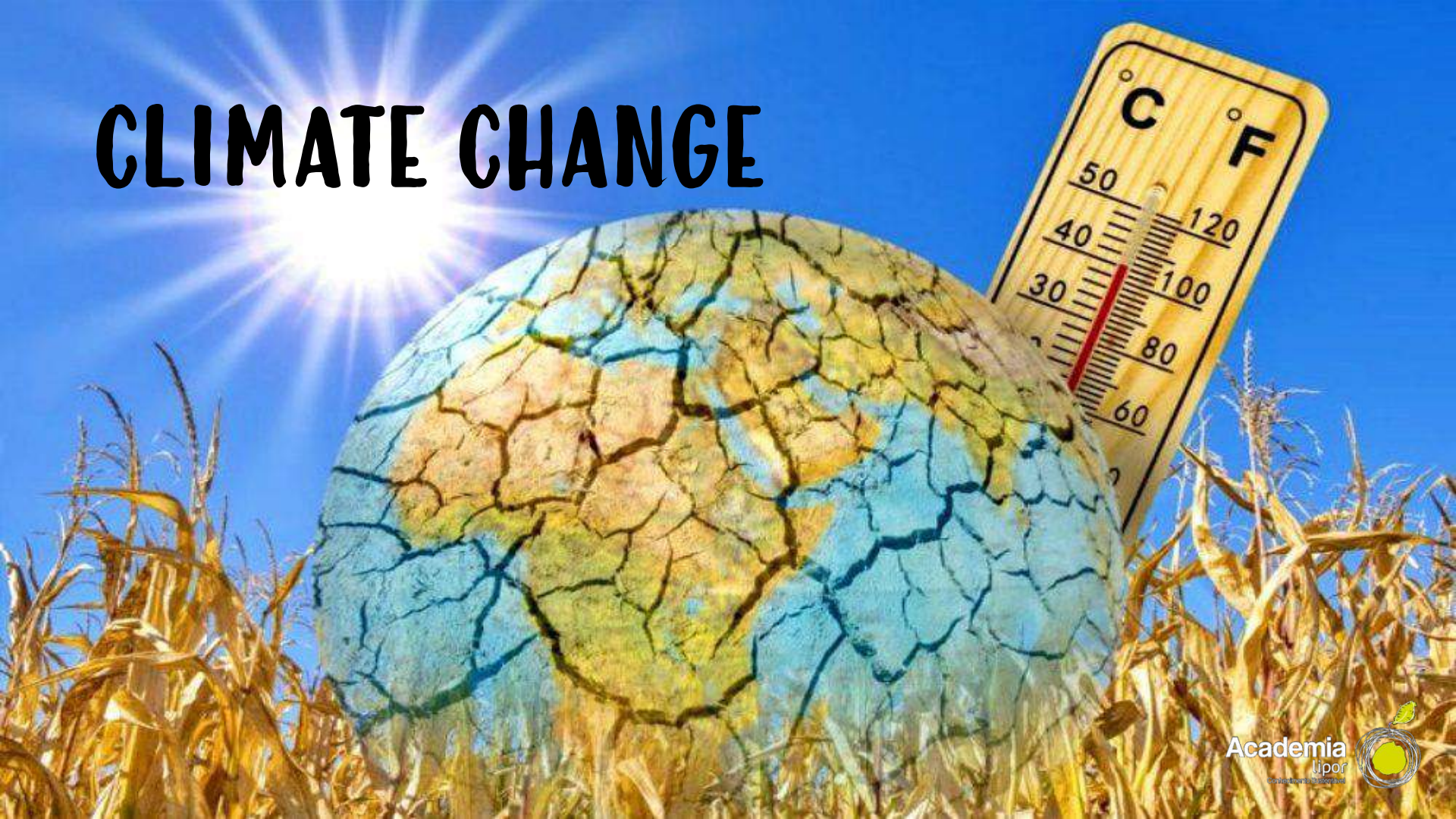
CLIMATE CHANGE



Climate Change

Climate change refers to long-term shifts in temperatures and weather patterns. These changes may be natural, such as variations in the solar cycle.

But since the 1800s, human activities have been the main driver of climate change , primarily due to burning of fossil fuels like coal, oil and gas.

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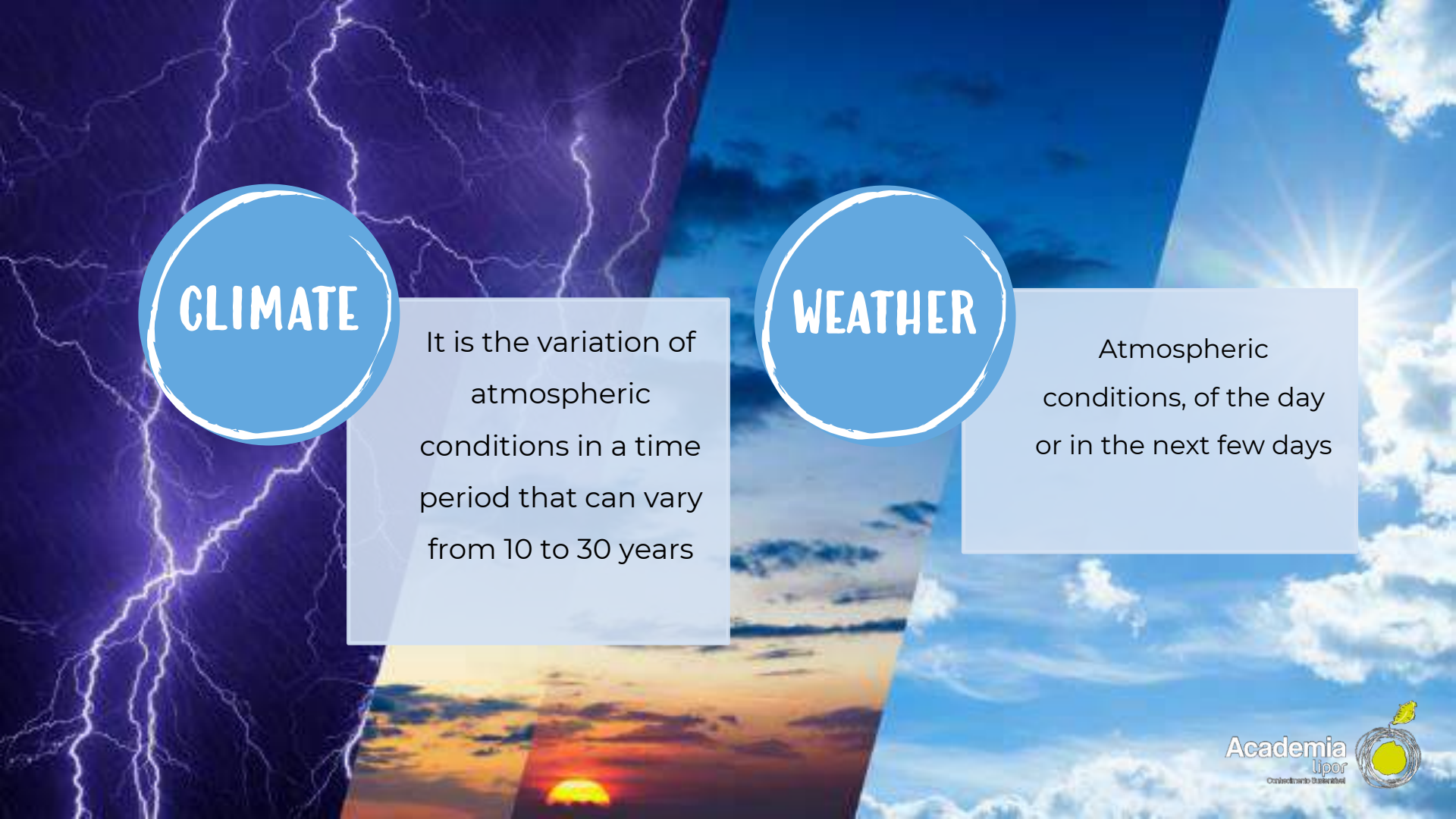

CLIMATE

It is the variation of atmospheric conditions in a time period that can vary from 10 to 30 years

WEATHER

Atmospheric conditions, of the day or in the next few days

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Natural Causes of Climate Change

Sun

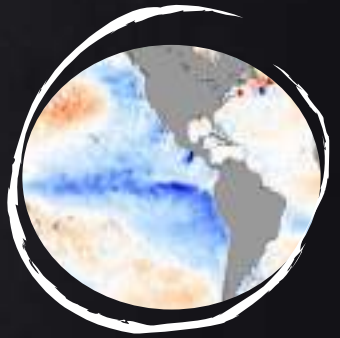
Solar cycle
Orbital variation

Meteors

Impact

Continental Drift

Tectonic plates
Volcanoes



Natural Phenomena

El Niño / La Niña
Composition of the Atmosphere

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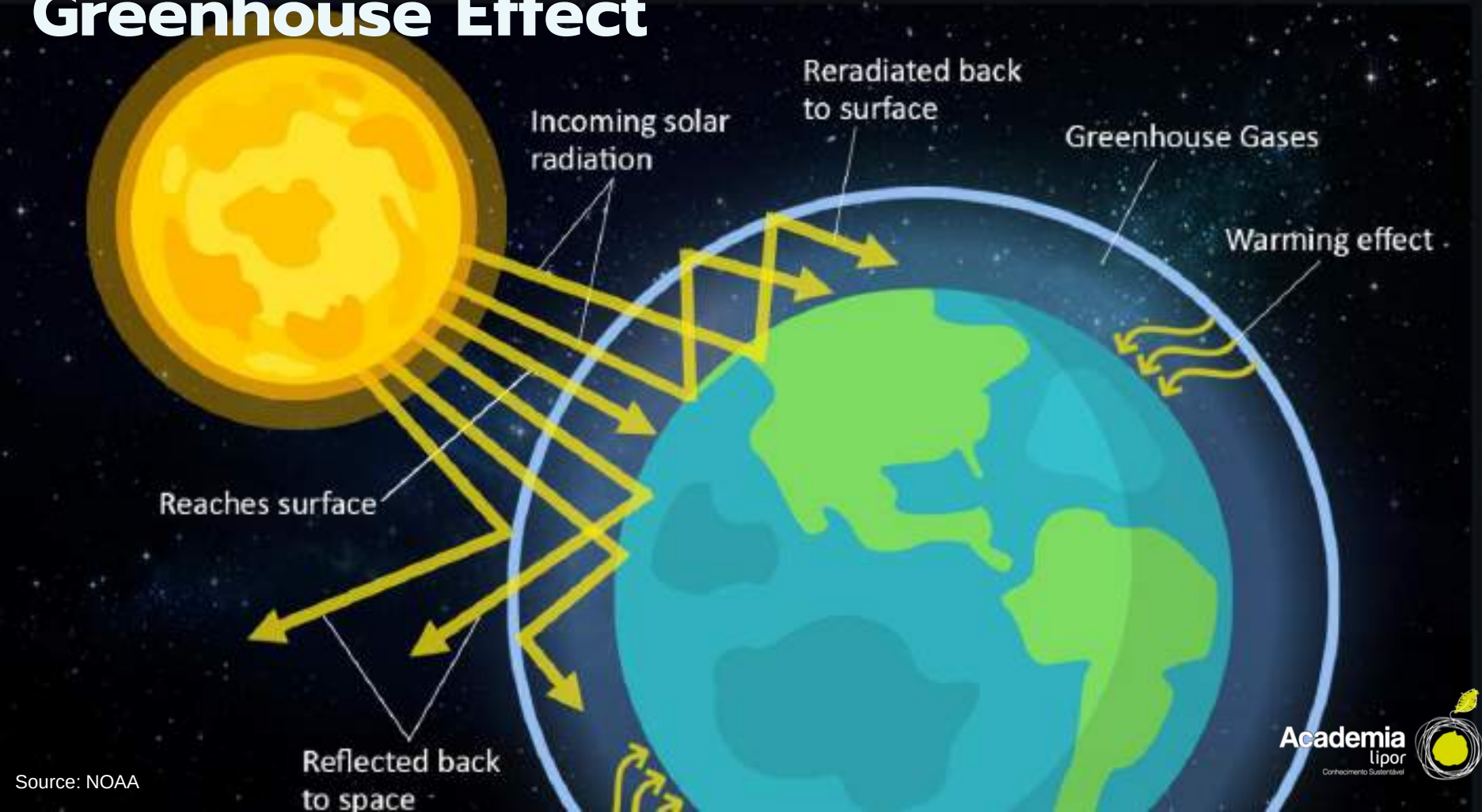
GREENHOUSE EFFECT

Global warming is nothing more than an intensification of the so-called greenhouse effect. This effect is a natural phenomenon and important to The Earth, because it allows the planet to stay warm. However, its intensification is harmful.

Greenhouse Effect



Source: NOAA

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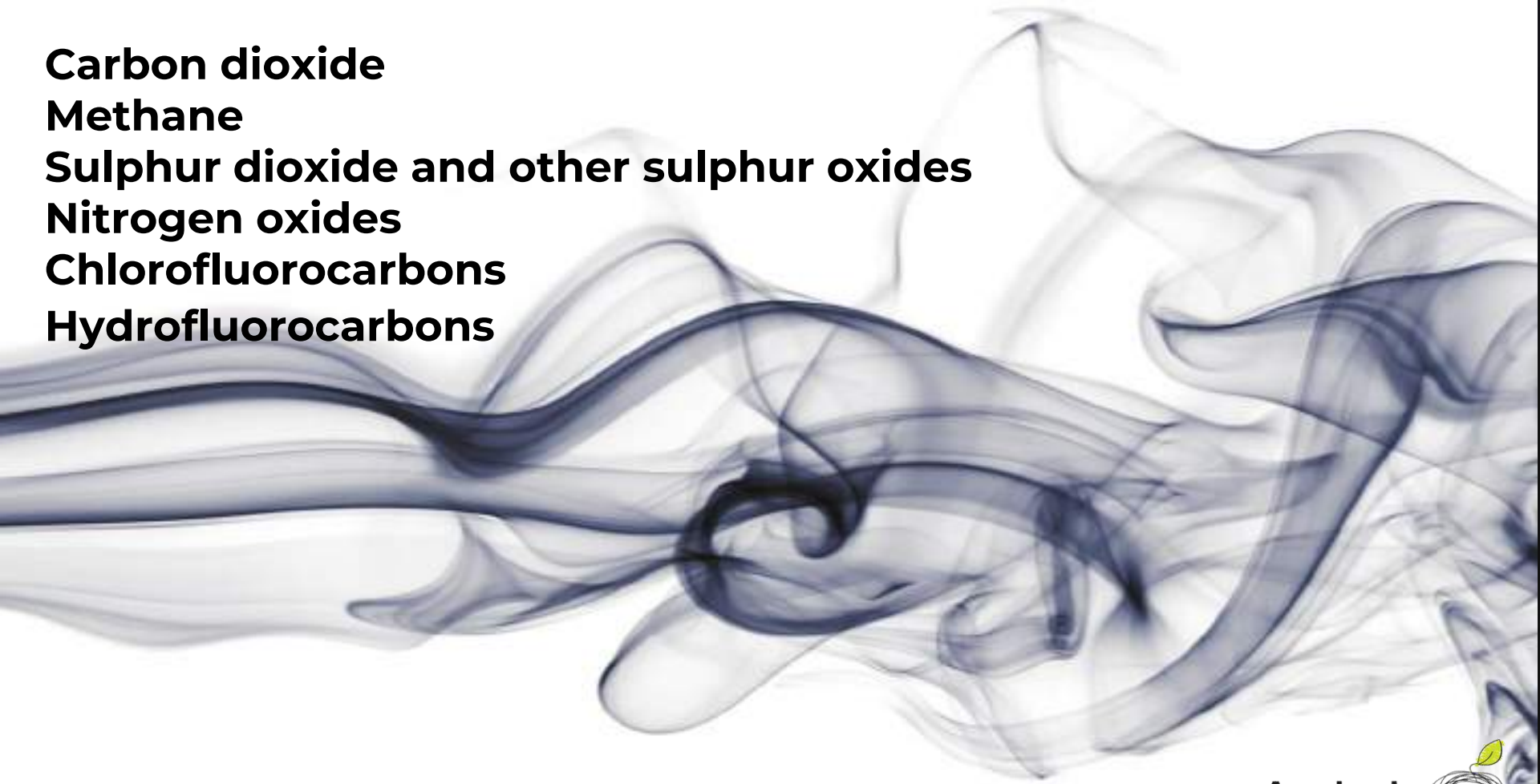
Carbon dioxide
Methane
Sulphur dioxide and other sulphur oxides
Nitrogen oxides
Chlorofluorocarbons
Hydrofluorocarbons



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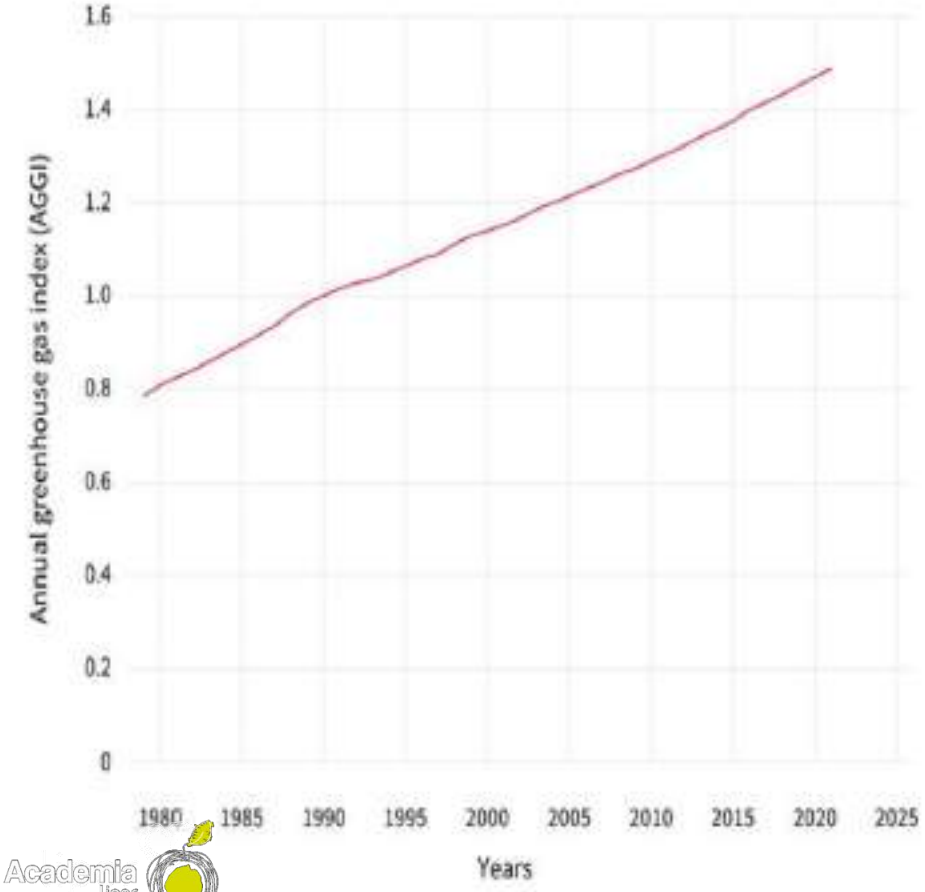
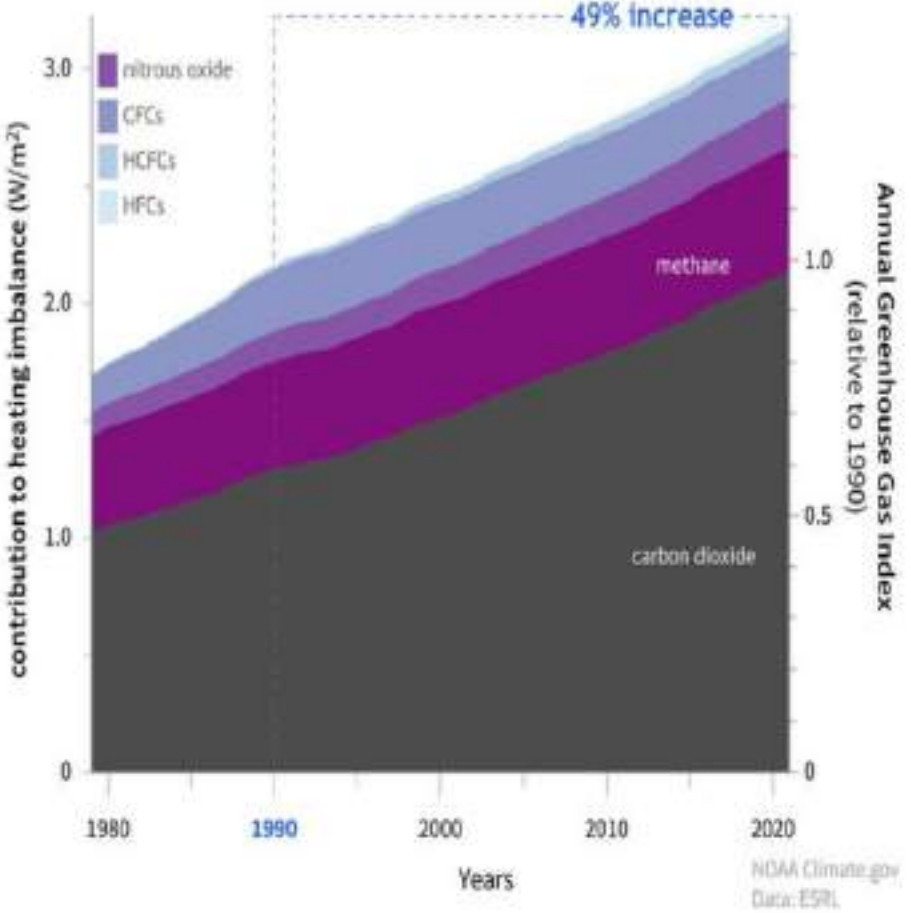
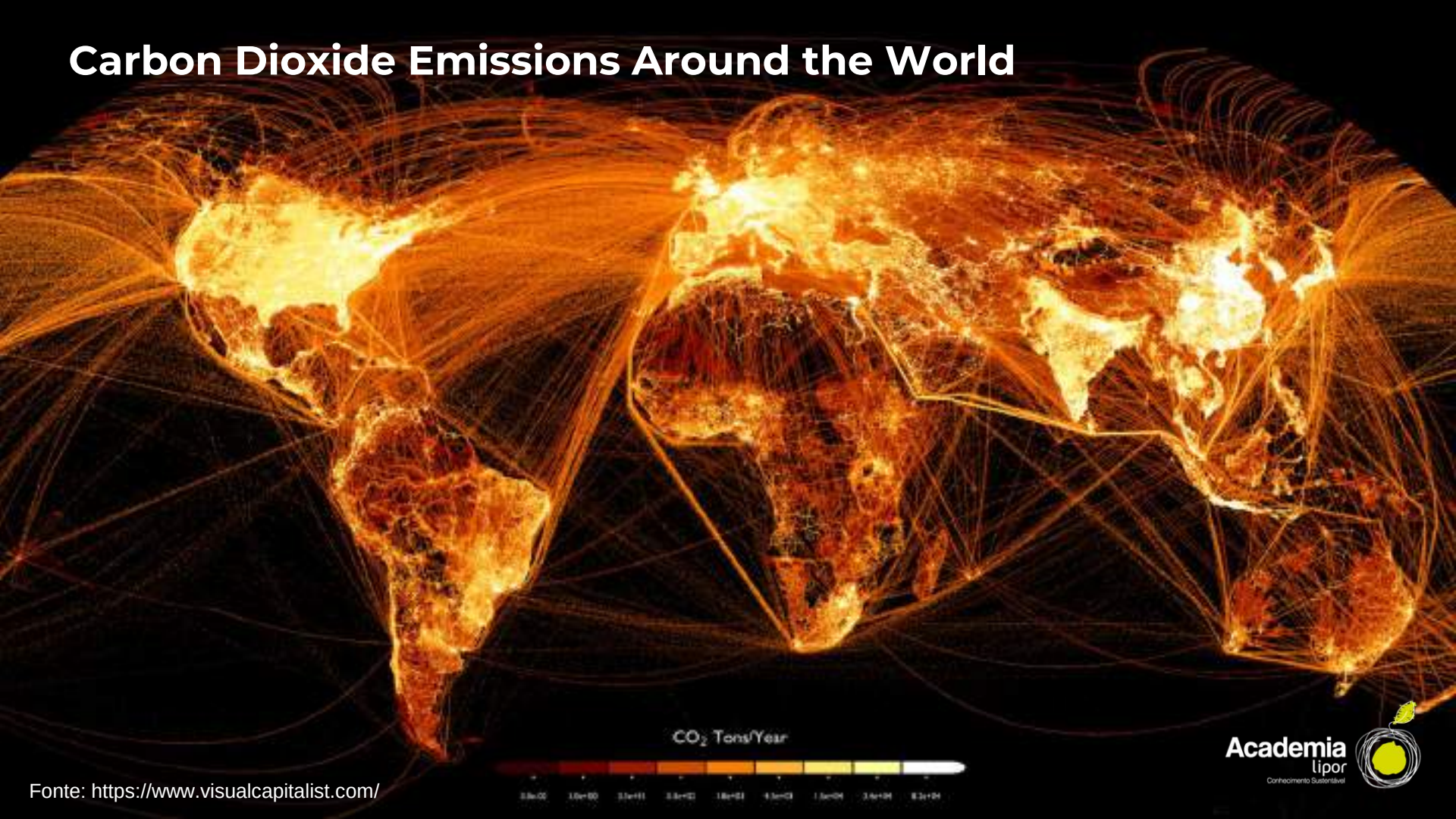
ANNUAL GREENHOUSE GAS INDEX



COMBINED HEATING INFLUENCE



Carbon Dioxide Emissions Around the World



Fonte: https://www.visualcapitalist.com/

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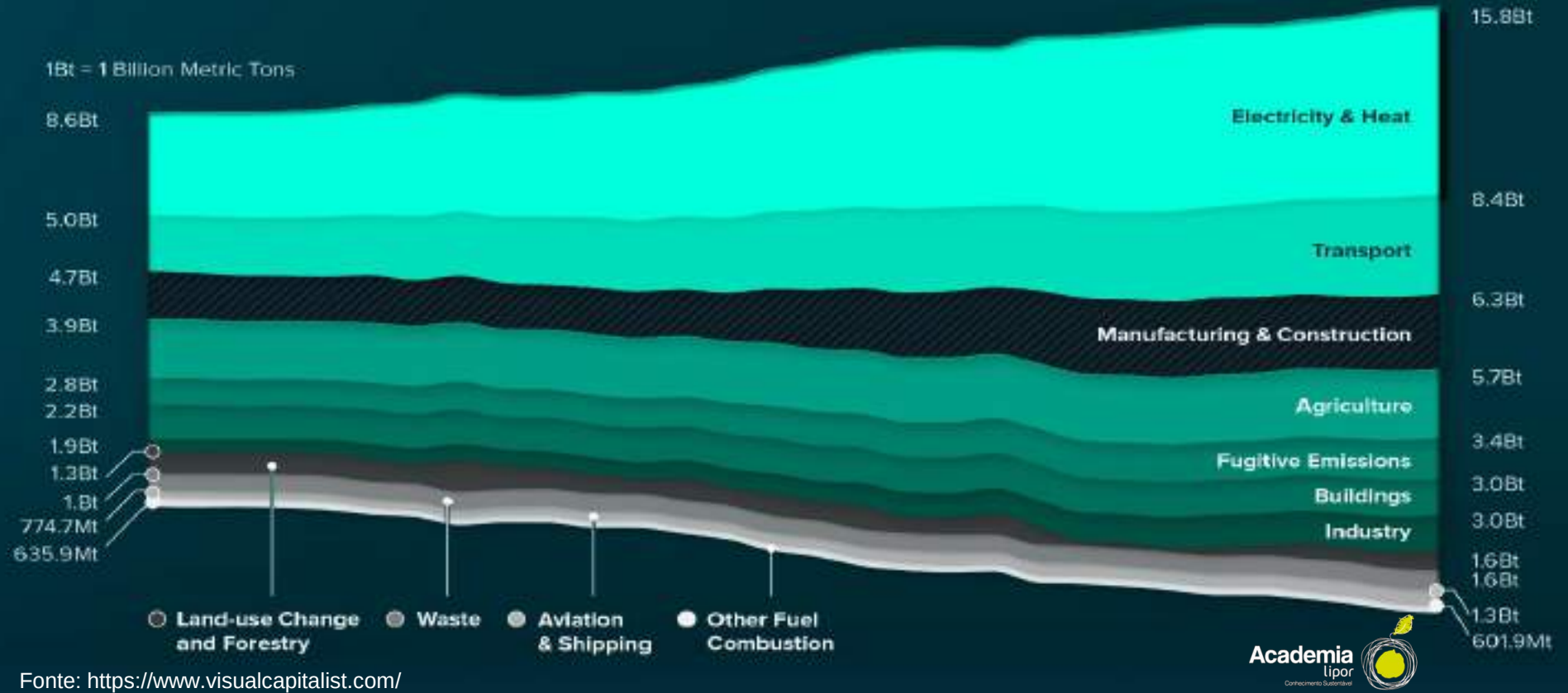
GLOBAL GREENHOUSE GAS EMISSIONS

By Sector

Although often less discussed than electricity and transport, the manufacturing and construction sector contributed to 6.3 billion tonnes of global greenhouse gas emissions in 2019.

Source: Our World In Data



Fonte: https://www.visualcapitalist.com/

Anthropic Causes of Climate Change

Deforestation

Food

Consumption

Energy

Transportation

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CUTTING DOWN FORESTS

Cutting down forests to create farms or pastures, or for other reasons, causes emissions. Each year approximately 12 million hectares of forest are destroyed. Since forests absorb carbon dioxide, destroying them also limits nature's ability to keep emissions out of the atmosphere. Deforestation, together with agriculture and other land use changes, is responsible for roughly a quarter of global greenhouse gas emissions.

Source: UN

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Producing food and Manufacturing goods

Producing food causes carbon dioxide, methane, and other greenhouse gases emissions in various ways, including through deforestation and clearing of land for agriculture and grazing, digestion by cows and sheep, the production and use of fertilizers and manure for growing. Industrial processes also release gases. Machines used in the manufacturing process often run on coal, oil, or gas; and some materials, like plastics, are made from chemicals sourced from fossil fuels. The manufacturing industry is one of the largest contributors to greenhouse gas emissions worldwide.

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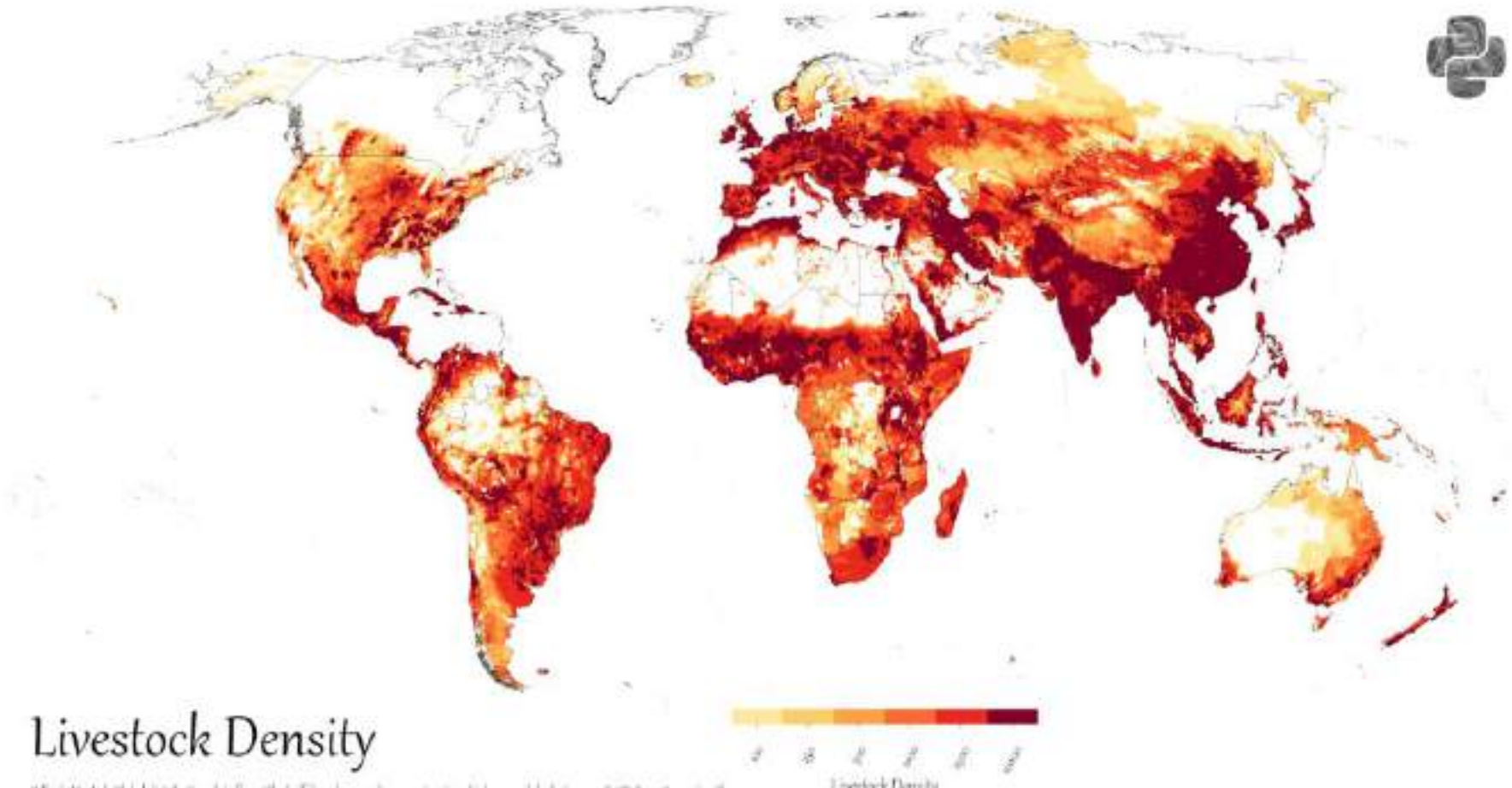
Source: UN



Livestock Density

Gilbert, M. et al. Global distribution data for cattle, buffaloes, horses, sheep, goats, pigs, chickens and ducks in 2010. Sci Data 5, 180227 (2018)
@Pyhoudini

TOP 10 COUNTRIES BY CONSUMPTION OF EACH TYPE OF MEAT PER CAPITA PER YEAR MEASURED IN KILOGRAMS

Bovine Meat

1	2	3	4	5	6	7	8	9	10
ARGENTINA	ZIMBABWE	UNITED STATES	AUSTRALIA	BRAZIL	UZBEKISTAN	CHAD	CANADA	ISRAEL	KAZAKHSTAN
46.9 kg	42.3 kg	37.9 kg	37.0 kg	35.4 kg	31.6 kg	27.5 kg	27.5 kg	27.2 kg	26.6 kg

Pig Meat

1	2	3	4	5	6	7	8	9	10
HONG KONG	POLAND	SPAIN	LITHUANIA	CROATIA	HUNGARY	MACAO	AUSTRIA	CZECHIA	GERMANY
55.2 kg	55.0 kg	52.6 kg	50.7 kg	49.6 kg	48.3 kg	46.9 kg	45.0 kg	44.5 kg	44.0 kg

Mutton & Goat Meat

1	2	3	4	5	6	7	8	9	10
MONGOLIA	ICELAND	BAHRAIN	TURKMENISTAN	CHAD	KUWAIT	NEW ZEALAND	MAURITANIA	QATAR	OMAN
66.3 kg	21.8 kg	21.4 kg	20.8 kg	17.9 kg	14.1 kg	12.9 kg	12.2 kg	11.6 kg	11.2 kg

Poultry Meat

1	2	3	4	5	6	7	8	9	10
ST. VINCENT & THE GRENADINES	ISRAEL	SAMOA	TRINIDAD AND TOBAGO	ANTIGUA AND BARBUDA	UNITED STATES	SAINT LUCIA	HONG KONG	PANAMA	BAHAMAS
74.7 kg	68.9 kg	65.7 kg	63.1 kg	61.8 kg	58.7 kg	57.6 kg	55.5 kg	55.4 kg	54.4 kg

CONSUMING TOO MUCH

How you move around, the thing that you buy, what you eat and how much you throw away all contribute to greenhouse gas emissions. A large chunk of global greenhouse gas emissions are linked to private households. Our lifestyles has a profound impact on our planet. The wealthiest bear the greatest responsibility: the richest 1% collection of the global population account for more greenhouse gas emissions than the poorest 50%.

USING TRANSPORTATION

Most cars, trucks, ships, and planes run on fossil fuels. That makes transportation a major contributor of greenhouse gases, especially carbon-dioxide emissions. Road vehicles account for the largest part, due to the combustion of petroleum-based products, like gasoline, in internal combustion engines. But emissions from ships and planes continue to grow. And trends point to a significant increase in energy use for transport over the coming years

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Generating power

Generating electricity and heat by burning fossil fuels causes a large chunk of global emissions. Most electricity is still generated by burning coal, oil, or gas, which produces carbon dioxide and nitrous oxide – powerful greenhouse gases that blanket the Earth and trap the sun's heat. Globally, a bit more than a quarter of electricity comes from wind, solar and other renewable sources which, as opposed to fossil fuels, emits little to no greenhouse gases, nor air pollutants.

CONSEQUENCES OF CLIMATE CHANGE


The Nature Conservancy
New Jersey

Since the end of the 19th century, the earth's average temperature has already increased

1°C

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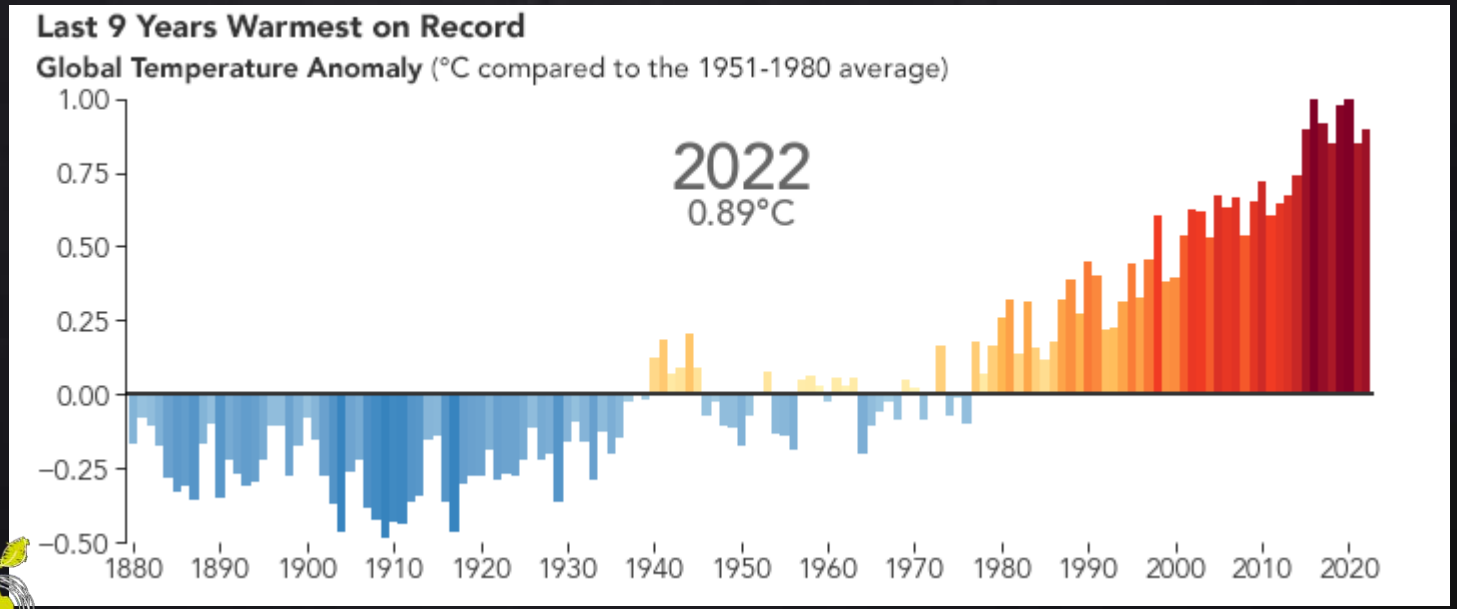
Hotter temperatures

With increasing GHG concentrations, so does the global surface temperature of the planet. The last decade, 2011-2020, is the warmest on record.



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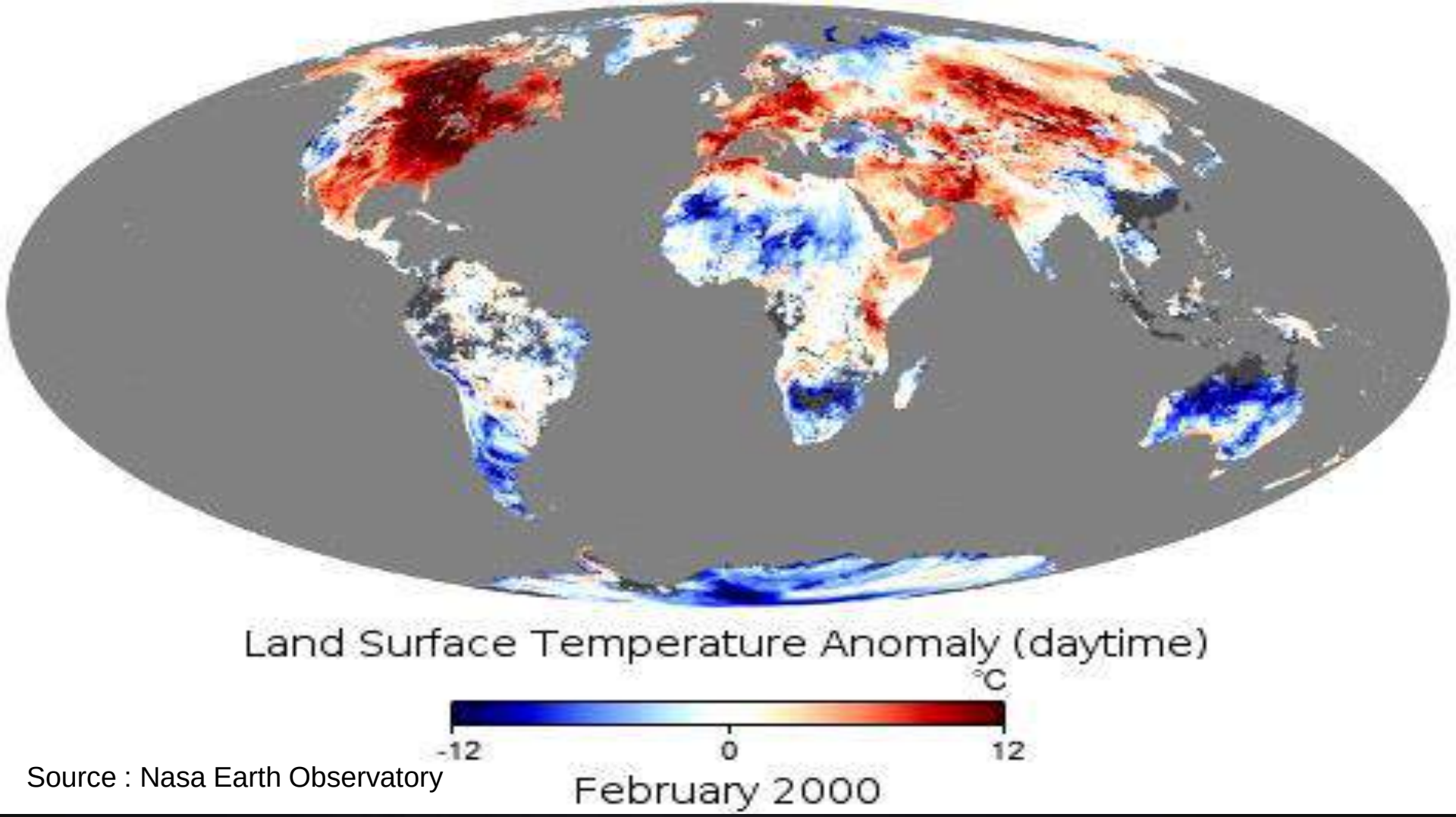

Source : Nasa Earth Observatory

Covering more than 70% of Earth’s surface, our global ocean serves as the largest solar energy collector on Earth. Because water has a higher heat capacity than air, it can absorb an immense amount of heat without a large increase in temperature. The ability to store and release heat over long periods of time gives the ocean a central role in stabilizing Earth’s climate system

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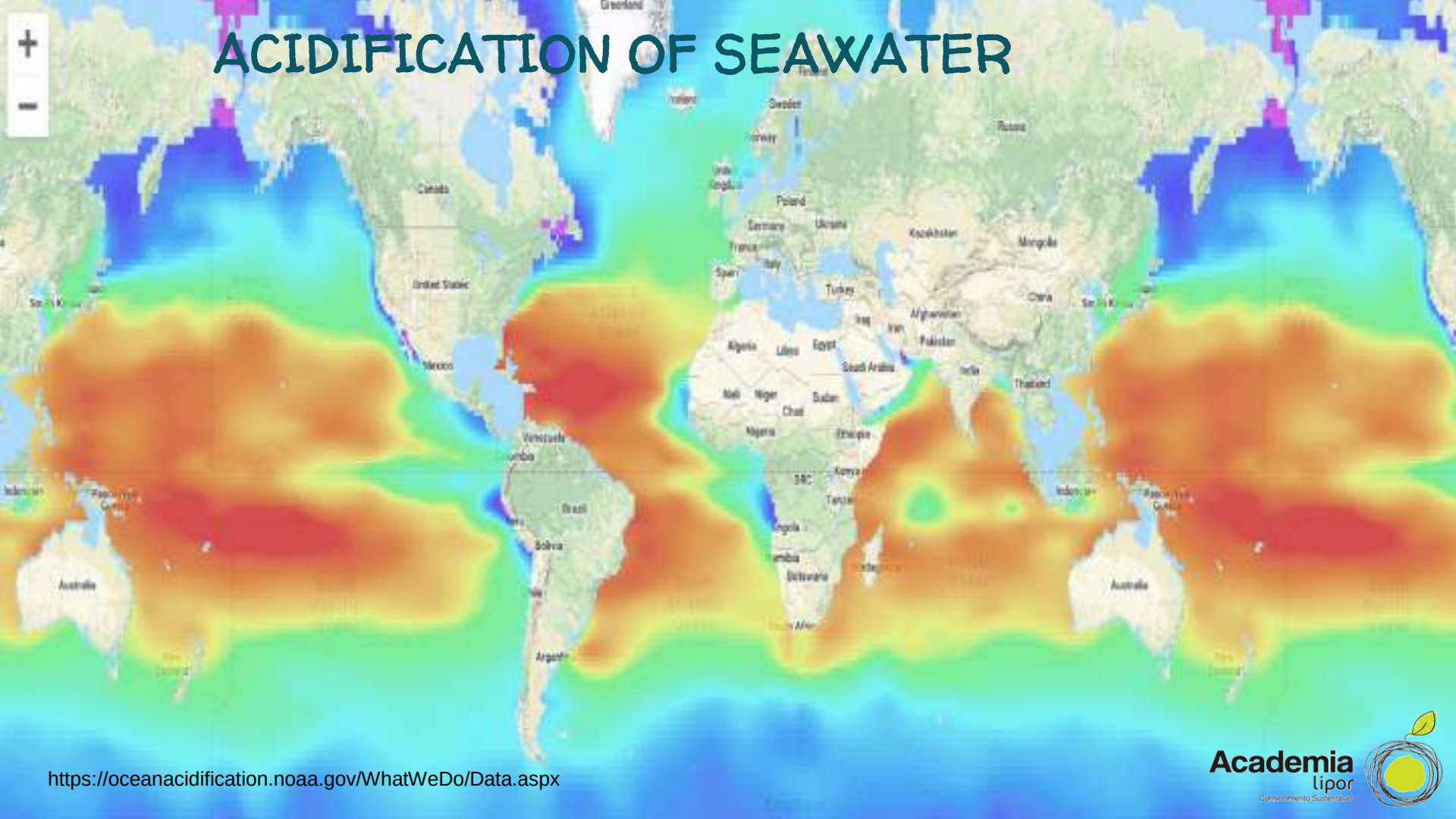
Eu sou o oceano..

SEAWATER ACIDIFICATION

In addition to absorbing heat, the ocean is also a sink of carbon dioxide. The greater the amount of CO_2 released into the atmosphere, the greater the amount absorbed by the ocean. It has absorbed about 30% of CO_2 emissions since the 80s of the last century; however, this absorption brings serious consequences, since it reacts with water and produces carbonic acid, resulting in water acidification

ACIDIFICATION OF SEAWATER



https://oceanacidification.noaa.gov/WhatWeDo/Data.aspx

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CORAL BLEACHING

Another consequence of the increase in temperature is coral bleaching.

This bleaching is related to loss of coral color due to expulsion or loss of algae pigment. Bleached coral becomes more susceptible to disease and has a reduced growth rate, even if it is recolonized by zooxanthellae algae. With the coral infected, the entire reef can be harmed, negatively affecting this ecosystem.

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SEVERE WEATHER

Destructive storms have become more intense and more frequent in many regions. As temperatures rise, more moisture evaporates, which exacerbates extreme rainfall and flooding, causing more destructive storms. The frequency and extent of tropical storms is also affected by the warming ocean. Cyclones, hurricanes, and typhoons feed on warm waters at the ocean surface.

Spain and Portugal suffering driest climate for 1,200 years, research shows

Effects of human-caused global heating are blocking vital winter rains, with severe implications for farming and tourism

Arizona wildfires: intense conditions send smoke plumes billowing into sky

Crews battled the gusty winds as the Pipeline fire exploded to more than 24,000 acres by Tuesday morning

adly Indian heatwave made 30 tim re likely by climate crisis

Australia floods: 50,000 on evacuation alert after deluge hits Sydney

Severe weather phenomena

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The importance of ice

About 15% of the world's ocean is covered by ice for much of the year, and although mostly concentrated in the polar regions this influences the global climate.

The bright surface of the sea ice reflects a lot of sunlight into the atmosphere. As this solar energy "stands out" and is not absorbed by the ocean, causes the temperatures closer to the poles to remain cold relative to the equator.

DEFROST

With the rise in temperature, the ice sheets and also the polar and mountain glaciers are rapidly losing their mass. Fewer bright surfaces are available to reflect sunlight back into the atmosphere more solar energy is absorbed to the surface and ocean temperatures increase. This starts a cycle of heating and melting. Warmer water temperatures slow ice growth in Autumn and Winter, and ice melts faster the following Spring.

This loss contributes to rising sea levels, and to the rise in its temperature

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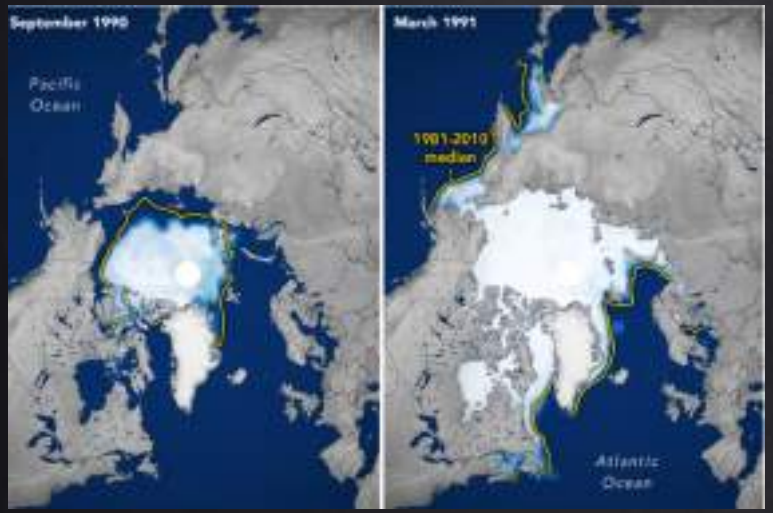
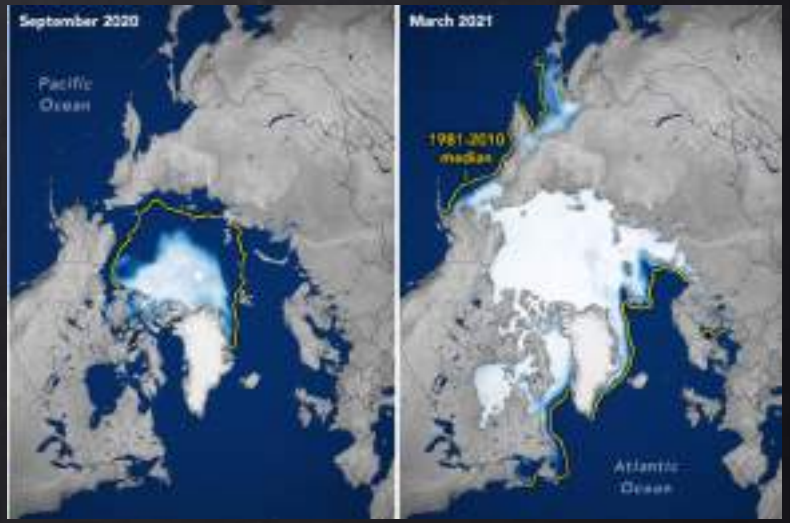
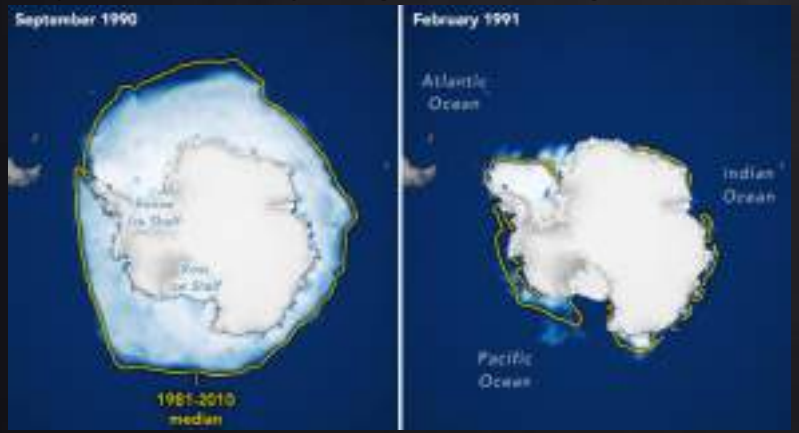




https://earthobservatory.nasa.gov/world-of-change/sea-ice-arctic



https://earthobservatory.nasa.gov/world-of-change/sea-ice-antarctic

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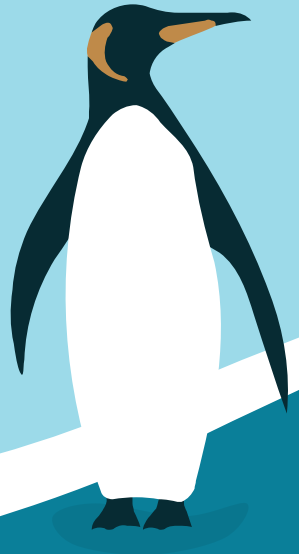
GREENLAND ICE LOSS
BILLION METRIC TONS PER YEAR
1901-1990
120
2006-2018
330

How many Penguins a Polar Bear eats?



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SEA LEVEL RISING

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Rising Sea Levels

While sea level globally rose by about 15 cm during the 20th century, it is currently rising at more than twice as fast. It is estimated to rise by 3.6 mm per year, showing no signs of slowing down, quite the opposite.

Sea level will continue to rise and could reach around 30-60 cm in the 22nd century if greenhouse gas emissions are not significantly reduced and limited global warming below 2°C.

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How will rising sea levels affect these cities?

Cadiz (Spain)

Cadiz Bay will be flooded affecting areas such as the port of Cadiz or other locations, such as San Fernando

Liverpool (United Kingdom)

Rising sea levels will make one of the UK's most important ports disappear – Albert Dock

Amsterdam (The Netherlands)

The Dutch capital, which is 3 meters below sea level, could lose about 90% of its surface

New York (U.S.A.)

Authorities have already started working on a 25-year plan to protect the city from rising sea levels

Cancun (Mexico)

Some of the most idyllic places (e.g. Playa Langosta) in this city will be underwater

Rio de Janeiro (Brazil)

Copacabana beaches, the airport and many of the Olympic buildings will be underwater

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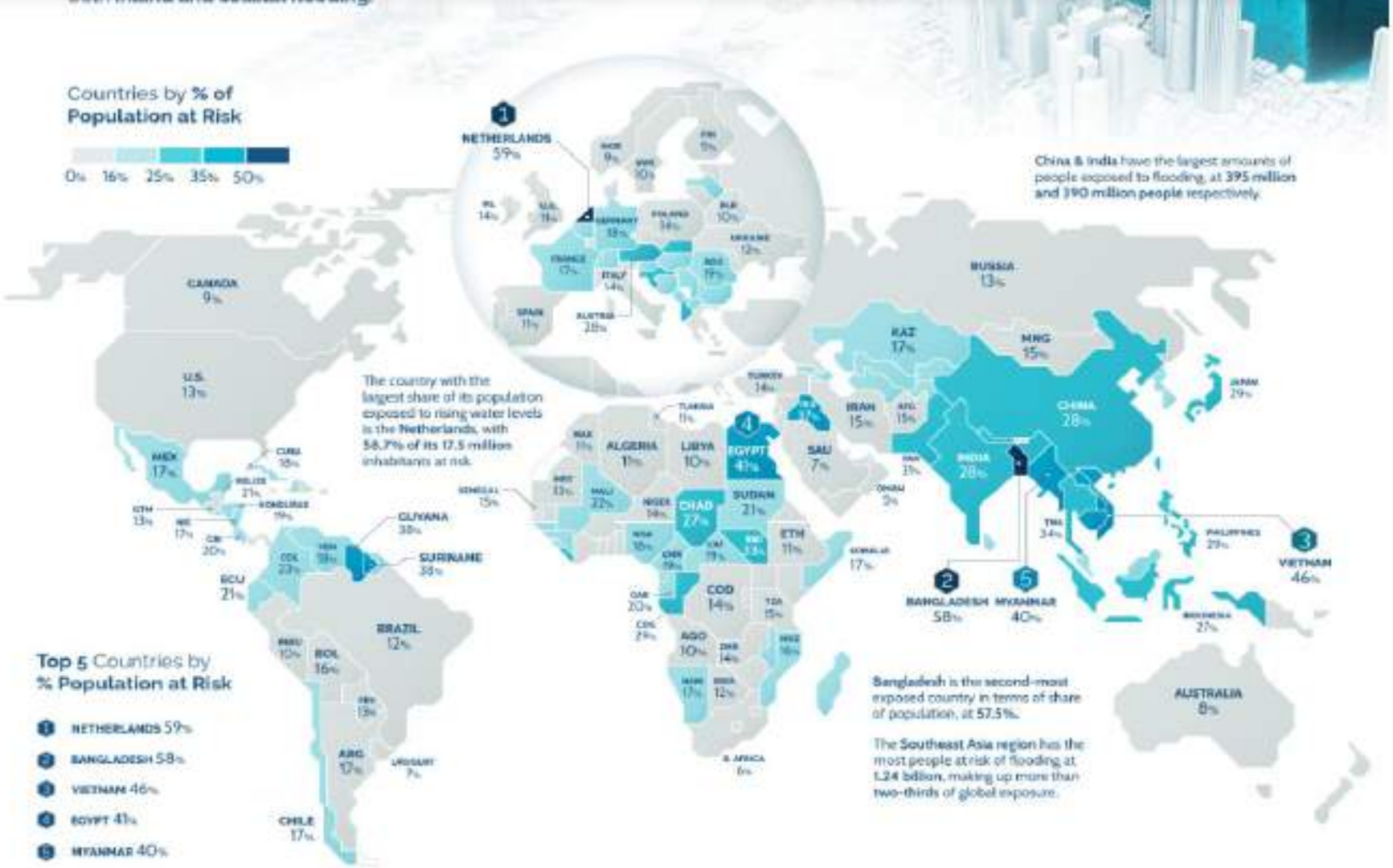
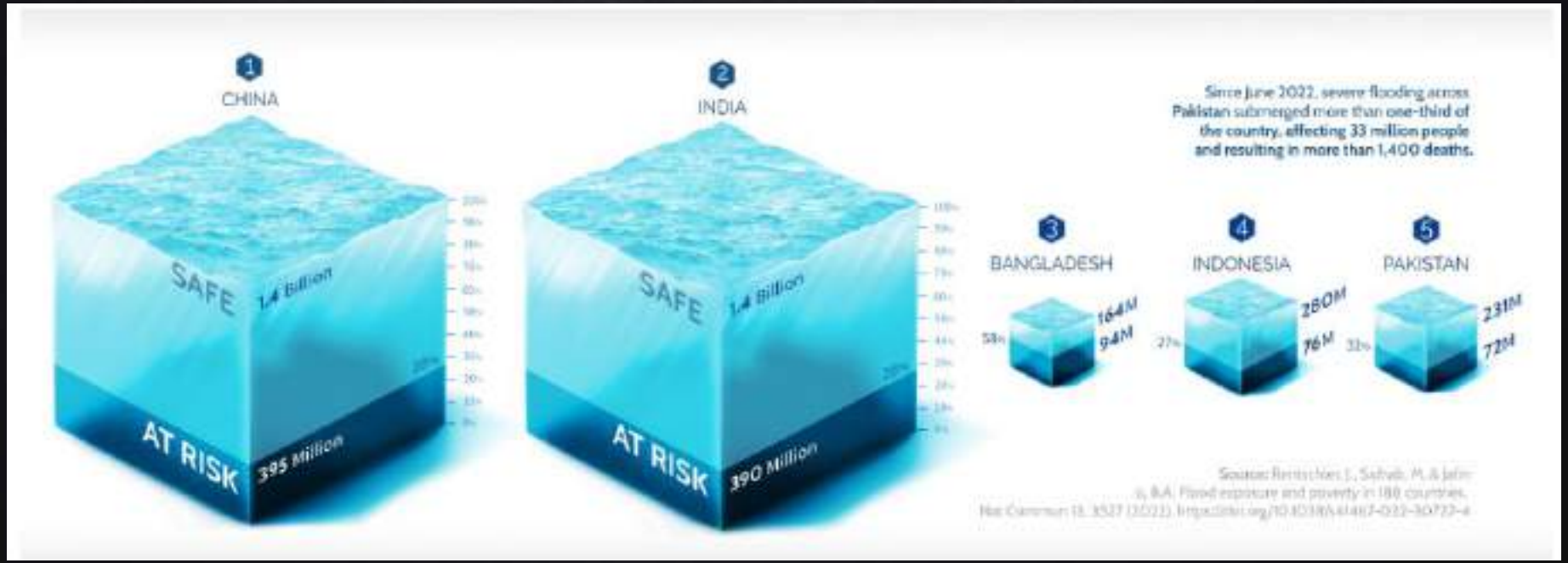

Countries by % of Population at Risk
0% 16% 25% 35% 50%
1 NETHERLANDS 59%
The country with the largest share of its population exposed to rising water levels is the Netherlands, with 58.7% of its 17.5 million inhabitants at risk.
China & India have the largest amounts of people exposed to flooding, at 395 million and 390 million people respectively.
Top 5 Countries by % Population at Risk
1 NETHERLANDS 59%
2 BANGLADESH 58%
3 VIETNAM 46%
4 EGYPT 41%
5 MYANMAR 40%
Bangladesh is the second-most exposed country in terms of share of population, at 57.5%.
The Southeast Asia region has the most people at risk of flooding at 1.24 billion, making up more than two-thirds of global exposure.

Top 5 countries with the must flood risk



Loss of species

Climate change poses risks to the survival of species on land and in the ocean. These risks increase as temperatures climb. Exacerbated by climate change, the world is losing species at a rate 1,000 times greater than at any other time in recorded human history. One million species are at risk of becoming extinct within the next few decades

DECREASE OF FOOD

Changes in the climate and increases in extreme weather events are among the reasons behind a global rise in hunger and poor nutrition. Fisheries, crops, and livestock may be destroyed or become less productive. With the ocean becoming more acidic, marine resources that feed billions of people are at risk. Changes in snow and ice cover in many Arctic regions have disrupted food supplies from herding, hunting, and fishing. Heat stress can diminish water and grasslands for grazing, causing declining crop yields and affecting livestock.

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Health, poverty and displacement

Climate change is the biggest health threat facing humanity. Climate impacts are already taking a toll on health, through air pollution, disease, extreme weather events, forced displacement, pressures on mental health, and increased hunger and malnutrition in places where people cannot grow or find enough food.

Climate-related events have forced the displacement of around 23.1 million people on average each year, leaving many more vulnerable to poverty. Most refugees come from countries that are more vulnerable and less prepared to adapt to the impacts of climate change.


ENVIRONMENTAL POLYGRAPH
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35% of all carbon dioxide is emitted by 50 companies

A combined value of around 480 billion tonnes of carbon dioxide equivalent emitted since 1965.

Death Valley may have recorded the highest temperature ever.

In California, USA, one of the highest temperatures of all time was recorded: 54.4°C.

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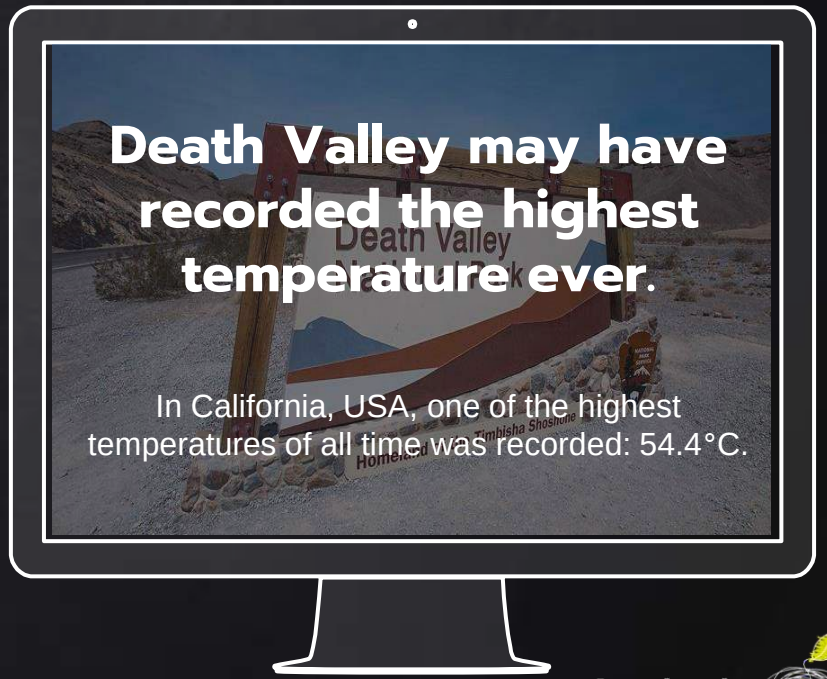

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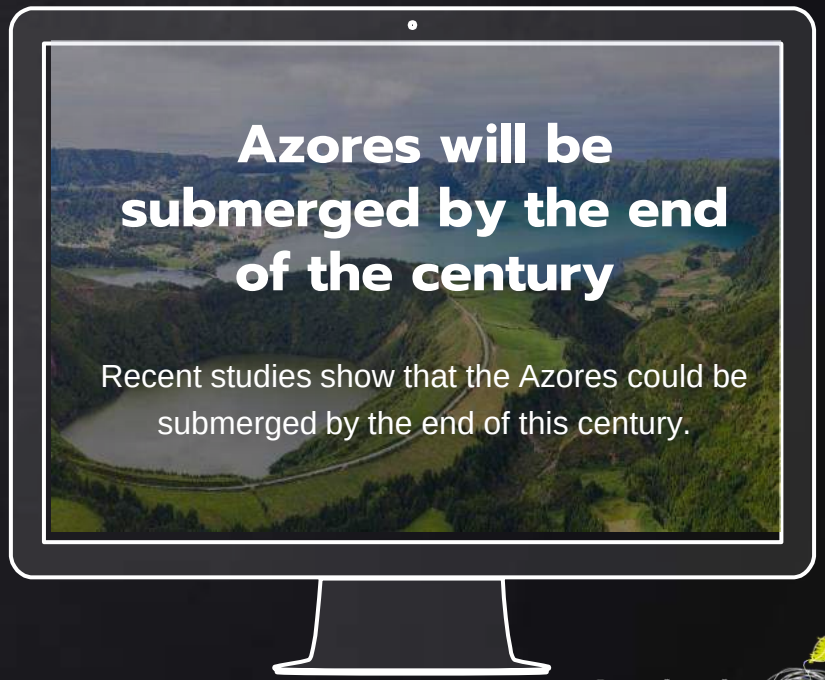

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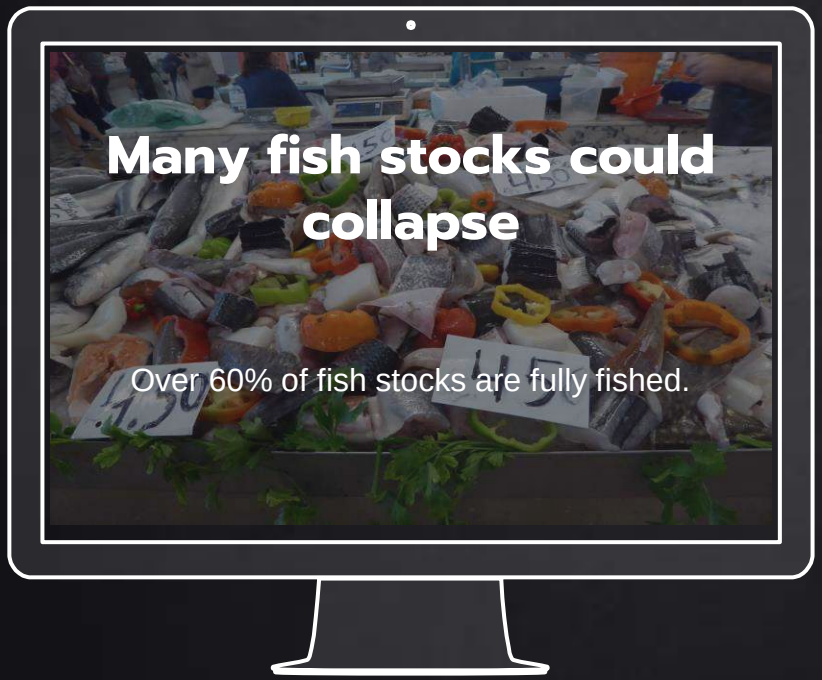

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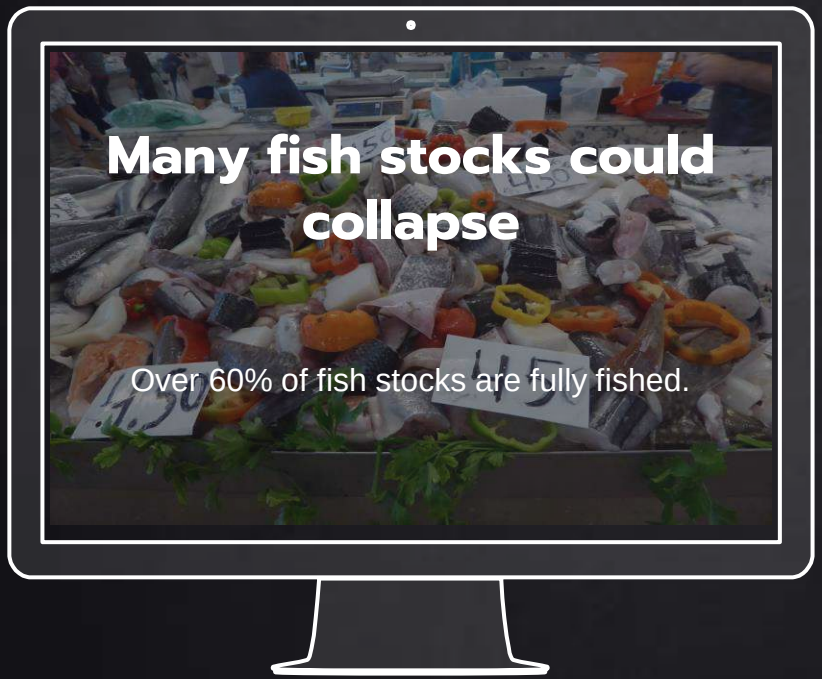

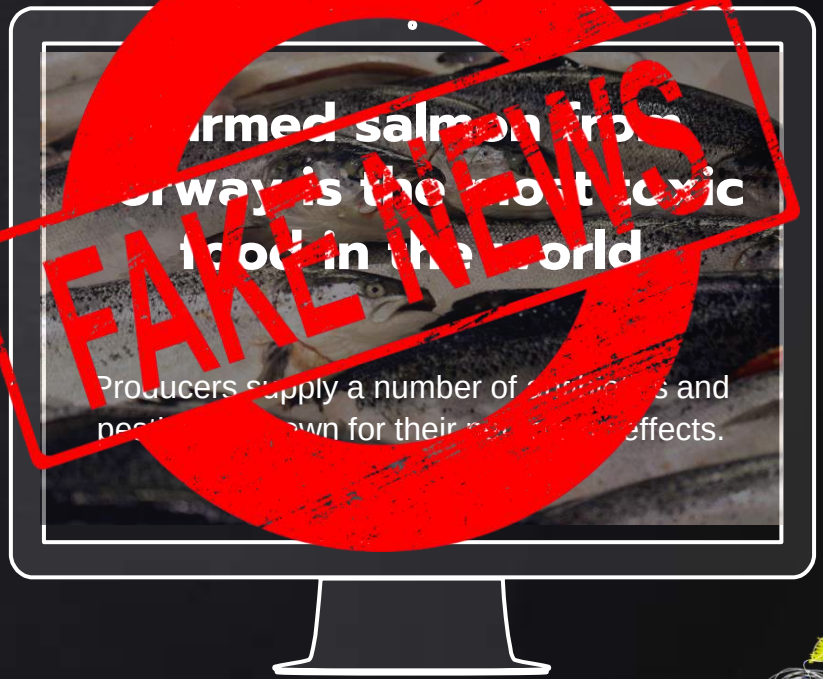

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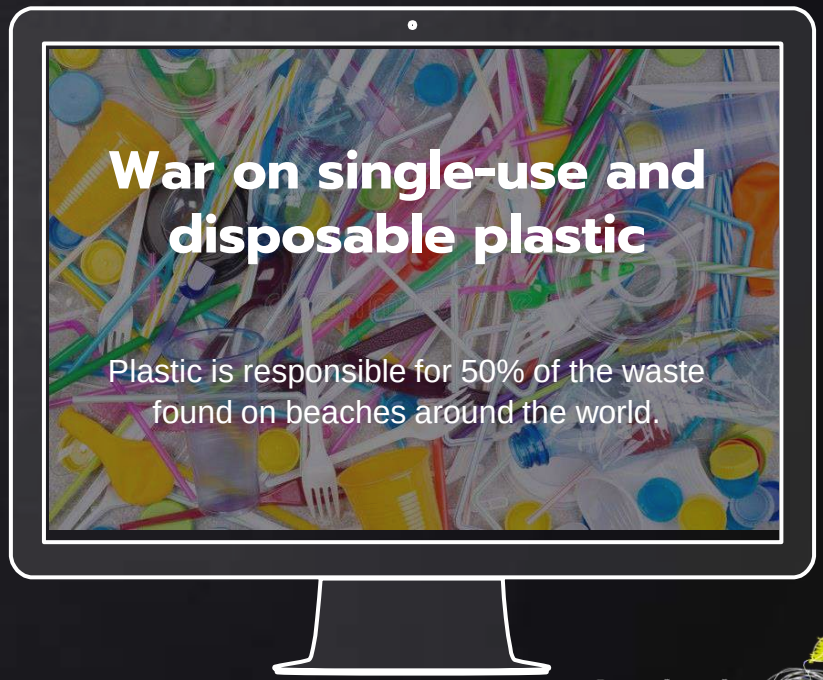

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How to fight Climate Change !!!

WHAT TO DO

13 Climate Action

Climate action encompasses actions taken to limit the increase and prevent the impacts of climate change.
For this, there are currently two lines of action:

Reduce greenhouse gases (GHG) in the atmosphere, reducing emissions and increasing carbon sequestration – **MITIGATION;**
Adapt the country to foreseeable changes to minimize the negative effects of climate change on ecosystems and the quality of life of the population – **ADAPTATION.**

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Portugal has made a commitment to achieve carbon neutrality by 2050, that is, to make the balance between emissions and removals of carbon and other GHGs from the atmosphere zero, in order to contribute to limiting global warming to 1.5°C, compared to the pre-industrial period, as provided for in the Paris Agreement.

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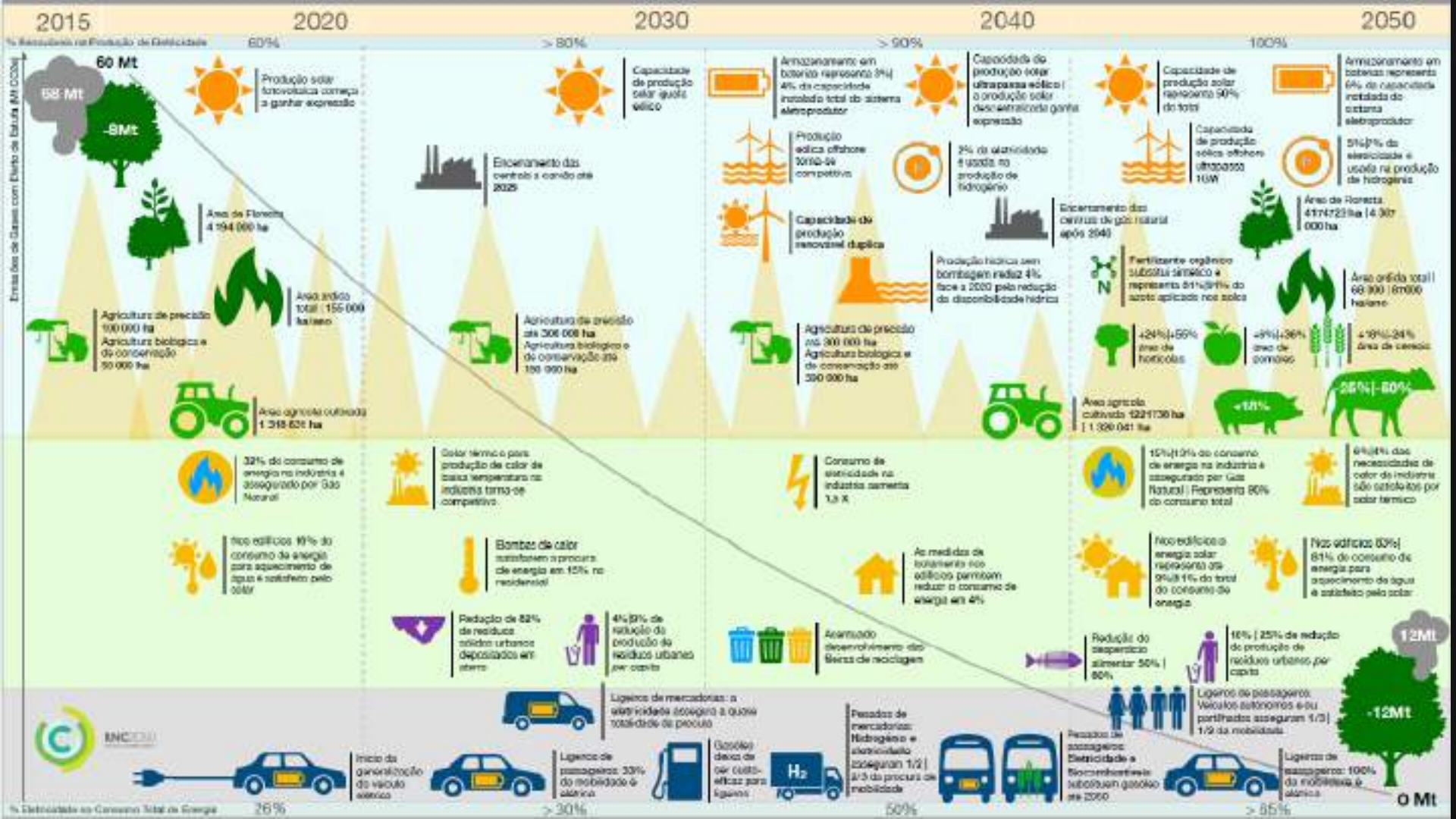
2015
2020
2030
2040
2050
% Renováveis na Produção de Eletricidade
60%
> 80%
> 90%
100%
Emissões de Gases com Efeito de Estufa (Mt CO2e)
60 Mt
68 Mt
-8Mt
Produção solar fotovoltaica começa a ganhar expressão
Área de Floresta 4 194 000 ha
Área ardida total 155 000 ha/ano
Agricultura de precisão 100 000 ha
Agricultura biológica e de conservação 50 000 ha
Área agrícola cultivada 1 318 631 ha
Capacidade de produção solar igualiza eólico
Encerramento das centrais a carvão até 2025
Agricultura de precisão até 300 000 ha
Agricultura biológica e de conservação até 150 000 ha
Armazenamento em baterias representa 3%| 4% da capacidade instalada total do sistema eletroprodutor
Capacidade de produção solar ultrapassa eólico | a produção solar descentralizada ganha expressão
Produção eólica offshore torna-se competitiva
2% da eletricidade é usada na produção de hidrogénio
Capacidade de produção renovável duplica
Encerramento das centrais de gás natural após 2040
Produção hídrica em bombagem reduz 4% face a 2020 pela redução da disponibilidade hídrica
Agricultura de precisão até 300 000 ha
Agricultura biológica e de conservação até 200 000 ha
Capacidade de produção solar representa 50% do total
Capacidade de produção eólica offshore ultrapassa 10GW
Armazenamento em baterias representa 6% da capacidade instalada do sistema eletroprodutor
5%|9% da eletricidade é usada na produção de hidrogénio
Área de Floresta 4174723 ha | 4 307 000 ha
Fertilizante orgânico substitui sintético e representa 61%|91% do azoto aplicado nos solos
Área ardida total | 68 000 | 81000 hectares
+24%|+55% área de hortícolas
+9%|+36% área de pomares
+18%|+24% área de cereais
Área agrícola cultivada 1221136 ha | 1 320 041 ha
+10%
25%|-60%
32% do consumo de energia na indústria é assegurado por Gás Natural
Nos edifícios 99% do consumo de energia para aquecimento de água é satisfeito pelo solar
Solar térmico para produção de calor de baixa temperatura na indústria torna-se competitivo
Bombas de calor substituem a procura de energia em 15% no residencial
Redução de 82% de resíduos sólidos urbanos depositados em aterro
4%|8% de redução da produção de resíduos urbanos per capita
Consumo de eletricidade na indústria aumenta 1,3 X
As medidas de isolamento nos edifícios permitem reduzir o consumo de energia em 4%
Acentuado desenvolvimento das fileiras de reciclagem
15%|10% do consumo de energia na indústria é assegurado por Gás Natural | Representa 80% do consumo total
6%|8% das necessidades de calor da indústria são satisfeitas por solar térmico
Nos edifícios a energia solar representa 3% 9%|11% do total do consumo de energia
Nos edifícios 63%| 61% do consumo de energia para aquecimento de água é satisfeito pelo solar
Redução do desperdício alimentar 50% | 80%
10% | 25% de redução de produção de resíduos urbanos per capita
12Mt
-12Mt
0 Mt
Ligeiros de mercadorias: a eletricidade assegura a quase totalidade da procura
Pesados de mercadorias: Hidrogénio e eletricidade asseguram 1/2| 2/3 da procura de mobilidade
Ligeiros de passageiros: Veículos autónomos e/ou partilhados asseguram 1/3| 1/2 da mobilidade
Início da generalização do veículo elétrico
Ligeiros de passageiros: 33% da mobilidade é elétrica
Gasóleo deixa de ser custo-eficaz para ligeiros
H2
Pesados de passageiros: Eletricidade e Biocombustíveis substituem gasóleo em 2050
Ligeiros de passageiros: 100% da mobilidade é elétrica
% Eletricidade no Consumo Total de Energia
26%
> 30%
50%
> 65%

- **Less Waste,** betting on the efficient management of Resources, privileging a circular Business model;
- **Less Carbon,** enhancing the binomial Carbon - Energy, converging towards decarbonization and energy transition;
- **More Climate,** enhancing our commitment to adapting to climate change;
- **More Biodiversity,** increasing the promotion of biodiversity in our context of activity.

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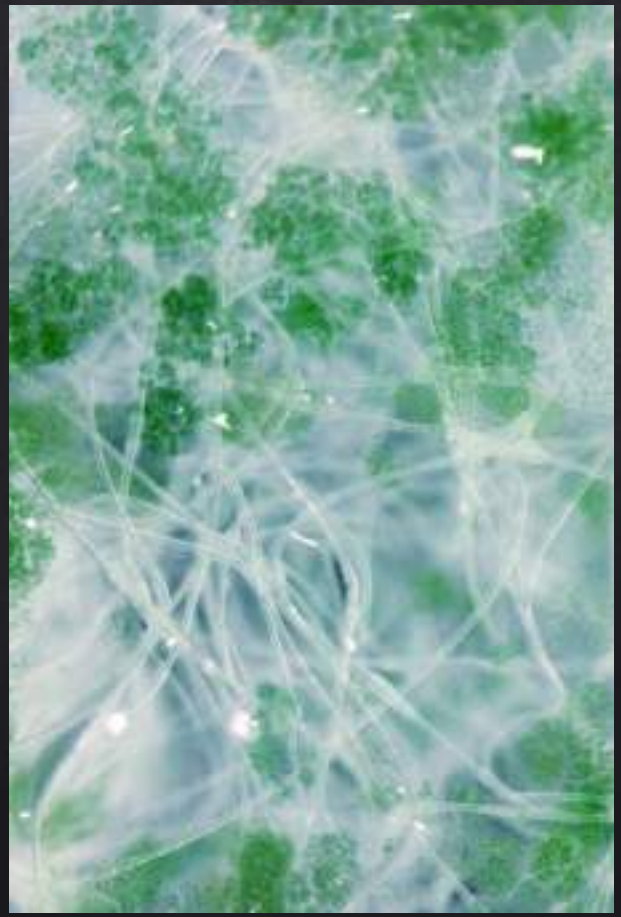
EXAMPLES

Postcarbonlab
London

Photosynthetic Coating



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EXAMPLES

In a beach north of Southampton in Long Island

Olivine sand (a mineral found in large quantities on earth) was added to the existing one because The Olivine when in contact with water, captures CO_2.

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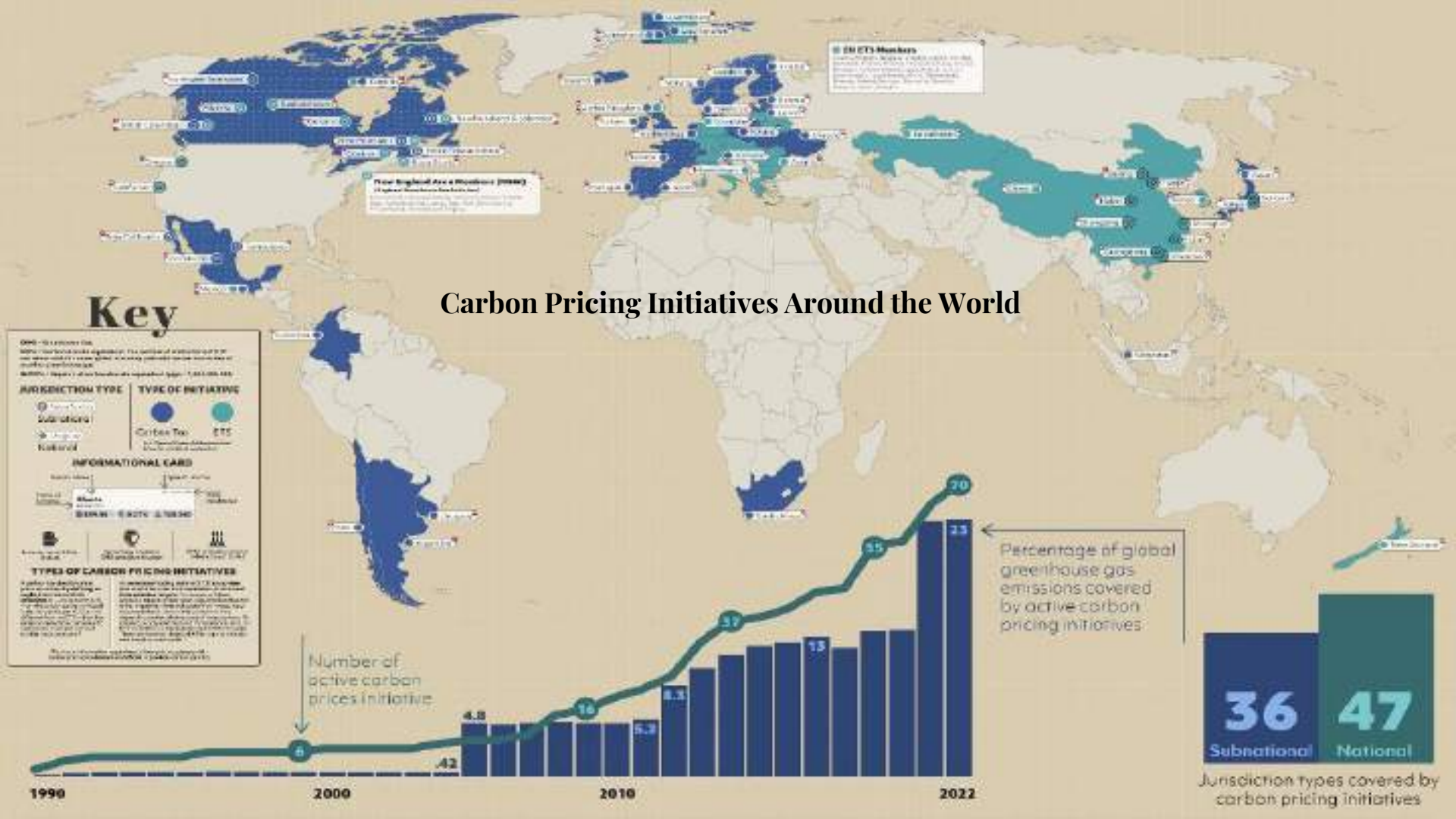
Carbon Pricing Initiatives Around the World



RESOURCES

https://www.noaa.gov/

https://earthobservatory.nasa.gov/

https://www.europarl.europa.eu/news/pt/headlines/priorities/cambio-climatico

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SUSTAINABILITY

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SUSTAINABLE DEVELOPMENT

"Sustainable development presupposes concern not only with the **present,** but with the **quality of life of future generations**, protecting **vital resources**, increasing factors of social cohesion and equity, ensuring environmentally friendly economic growth.“

Brundtland Report "Our Common Future", 1987

The main goal is to participate

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LANDMARKS

1949

United Nations Scientific Conference on the Conservation and Use of Natural Resources

1987

Brundtland Report – Our Common Future

1992

Rio-92 | United Nations Conference on Environment and Development led to the creation of Agenda 21 (also known as the Earth Summit or Eco-92)

1994

European Conference on Sustainable Cities - adoption of the Aalborg Charter: Charter of sustainability of European Cities

2000

Hannover Conference UN Millennium Summit on the Millennium Development Goals

2012

Rio+20 – United Nations Conference on Sustainable Development

2015

Sustainable Development Summit (New York) – UN has established 17 New Sustainable Development Goals (SDGs)

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AGENDA 21 | 1992

Agenda 21 (A21) resulted from the Earth Summit (Rio 92). It is a document signed by almost two hundred governments, which seeks to unite environmental protection with economic development and social cohesion.

"Each local authority must enter into dialogue with its citizens, local organizations and private companies and adopt a "Local Agenda 21". Through consultative processes and consensus-building processes. Local authorities should learn from citizens and local, civic, community, commercial and industrial organizations and acquire the information needed to develop better strategies. The consultation process should increase family awareness on sustainable development issues.“

Agenda 21, Chapter 28, 1992

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MILLENNIUM SUMMIT, NEW YORK | 2000

It **was attended by** 147 Heads of State and Heads of Government from **191 countries**.

Setting **8 priority objectives to "solve" in the new millennium – MILLENNIUM DEVELOPMENT GOALS | MDG**

- Reduce poverty and hunger by half;
- Increase primary education levels ;
- Promotion of gender equality;
- Reduce by 2/3 child mortality;
- Reduce by ¾ maternal mortality
- Reduce AIDS, Malaria and Tuberculosis spreading;
- Ensure environmental sustainability;
- Develop global development partnerships, with trade, development aid and debt reduction as key points.

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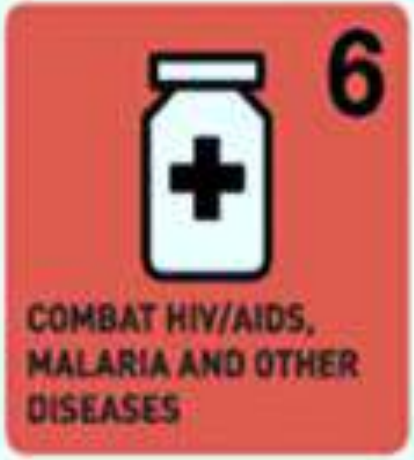

SUSTAINABLE DEVELOPMENT GOALS | 2015

Established at a UN Summit in New York (USA), this is the new agenda for action until 2030, which is based on the progress and lessons learned from the 8 Millennium Development Goals between 2000 and 2015. This agenda is the result of the joint work of governments and citizens around the world to create a new global model to end poverty, promote prosperity and well-being for all, protect the environment and combat climate change.

"The seventeen Sustainable Development Goals are our common vision of humanity and a social contract between world leaders and citizens. They are a list of things to do for people and the planet, and a plan for success."

UN Secretary-General Ban Ki-Moon

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1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS
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Tracking

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From 21 to 30 points

The Lazy One

Laziness is certainly not considered a virtue... but it is undeniable that at some point in our lives we have all felt it. To encourage everyone who, in some way, feels lazy, but still has some energy to save the World, the United Nations has created an action guide! Fantastic, isn't it? The Action Guide for the lazy person identifies a set of actions that you can do from your couch, your home, your community, your job.

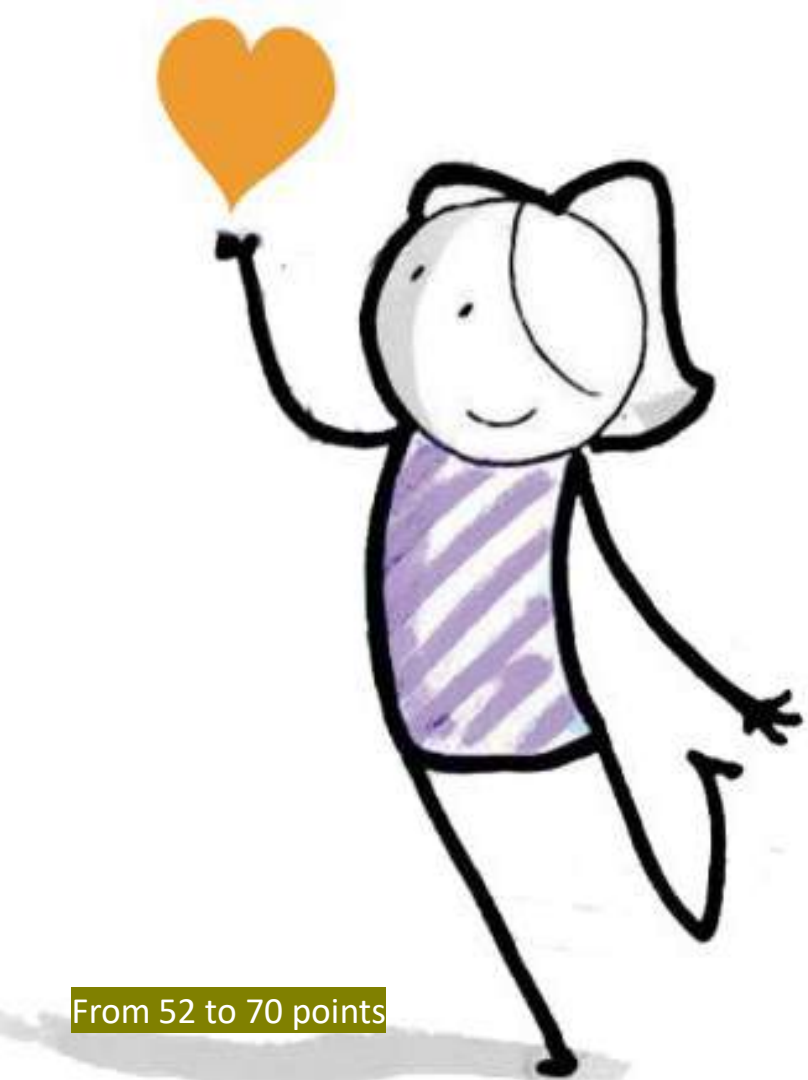
Don't forget: it's important to do and contribute to making a change!

The Undecided

The Undecided continues to swing... He knows the main challenges facing the promotion of sustainable development, he knows who the main actors in development are, he believes in the mobilizing role of citizen action, but he often wonders whether he can do it alone. difference. Take part in some community events that can promote social, economic or environmental change, but if that day there is a good film showing, or if it is a beautiful sunny day to go to the beach, reconsider your participation.

But, because the transformation is not yet complete, there is still a long way to go to leave no one behind.

From 31 to 51 points



From 52 to 70 points

The Passionate

The Passionate believes that it will transform the world. You have a clear idea of what you want to do. He knows the main challenges facing society and knows that we have a way to go to eradicate poverty, eliminate hunger, protect our common home and guarantee sustainable progress that allows us to reduce inequalities between and within countries. He is a pacifist, believes in dialogue, tolerance and full respect for human, social and economic rights. You know that partnerships are important to consolidate your intervention, but you need an action plan! Let's do it.

The Agent of Social Transformation

Is not a superhero, nor a heroine, but a person aware of the world's main challenges, critical of simplistic visions and solutions, active in promoting solutions to these challenges and a partner of everyone who believes in a collaborative effort of citizens, governments, municipalities, civil society, companies to eradicate poverty and leaving no one behind.

The social transformation agent is capable of:

ENGAGE and EMPOWER people, civil society, companies, municipalities and governments through collaborative processes that present sustainable solutions

From 71 to 85 points

2 ZERO HUNGER

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Grow food and aromatic plants in a vegetable garden or potted on the balcony

Avoid **Food Waste** by taking advantage of all the food and leftovers for other meals

Donate food to institutions or directly to people in need

Produce your own compost

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2 ZERO HUNGER

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

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6 CLEAN WATER AND SANITATION

Ensure availability and sustainable management of water and sanitation for all

Wash your teeth with a **closed faucet**

Aproveitar Enjoy cold water for the toilet or to water

Take **quick showers**

Choose to use the dishwasher/laundry machine, with the **maximum load**

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7 AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable reliable, sustainable and modern energy for all

Make Energy Conscious Use **Campaigns**

Focus on walking or cycling

Choose class A energy label equipment

Whenever possible, **turn off the lights** and use natural light

For long distances, **use** public transport or share your own car

Choose LED bulbs

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7 AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable reliable, sustainable and modern energy for all

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11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resiliente and sutainable

Build parks and **recover** leisure spaces

Build/participate in **community gardens**

Promoting **Circular Economy, e.g. Recycling**

Buy products in **local trade**

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12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns

Prevent waste production: **Decline and Reduce**

Avoid disposable objects by opting for **reusable**

Donate/Buy 2nd hand clothes, shoes, accessories and toys

Opt for products in family packaging and **bulk purchases**

Repair electrical and electronic equipment, instead of buying new ones

Rent or borrow

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13 CLIMATE ACTION

Take urgente action to combat clime change and its impacts

Reduce fossil fuel consumption by opting for renewables

Promote **cleaning of forests**

Tree planting in rural and urban areas

Carry out **campaigns against fires**

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14 LIFE BELOW WATER

Conserve and sustaunably use the oceans, seas and marine resources for sustainable development

Campaign: Don't throw trash on the floor

Use **reusable** packaging and ecopoints

Avoid disposable plastic packaging

Participate in beach **cleanings** / on the banks of rivers / streets

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15 LIFE ON LAND

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reserve land degration and halt biodiversity loss

Plant **native trees** and shrubs

Reducing the use of **pesticides** in agriculture

Build insect hotels

Reduce exotic and invasive plants

Buy **recycled** paper

Build drinking fountains and feeders for birds

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WE THE PEOPLE

THE GLOBAL GOALS
For Sustainable Development

CIRCULARITY

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Industrial Revolution

We are living an era of transformation. The 4th Industrial Revolution reshapes our societies and our economies

Till today, all the industrial revolutions skyrocketed the productivity of human labor, they provided the technologies and the systems to produce more products with less labor, less energy, and less raw materials. But together with the rapid increase of productivity, all the industrial revolutions created big waves of pollution. Industrial revolutions are directly linked with the emergence of new forms of pollution and the rise of new health and environmental problems.

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INDUSTRY 1.0

Mechanization, steam power, weaving loom

1784

INDUSTRY 2.0

Mass production, assembly line, electrical energy

1870

INDUSTRY 3.0

Automation, computers and electronics

1969

INDUSTRY 4.0

Cyber Physical Systems, internet of things, networks

TODAY

The Earth Overshoot Day

The Earth Overshoot Day marks the date when demand for ecological resources exceeds what Earth can regenerate in that year. In 2022, it took place on July 28, one day earlier than in 2021.

In 1969, our planet was enough to meet human demands. By 2022, it would take 1.75 planets to meet all our needs without penalising the following generations

27 JULY 2023

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ECOLOGICAL FOOTPRINT

The ecological footprint is an indicator of the amount of resources consumed. The total ecological footprint is a measure of the biologically productive land and water area that the population needs to satisfy consumption at a given time, taking into account all material and energy resources.

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English
Global Footprint Network
WHAT IS YOUR
Ecological Footprint?
How many planets do we need if everybody lives like you?
When is your personal Overshoot Day?
TAKE THE FIRST STEP
Earth Overshoot Day 2021 is July 29
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Linear Economy

The world economy has been built on a linear business model, which is now under threat because of the natural resource's shortage.
The way and speed with which we use natural resources is unsustainable: We consume more resources than what the planet can produce, in an economy that tends to be linear that is, raw materials are extracted, processed to make new products, they are sold, used and discarted as waste.

Is fundamental to shift the paradigm and is necessary to create a new management trend!

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Linear Economy

Use and throw away

Unsustainable model

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Linear Economy Consequences

- Materials and products loss of value
- The risen of raw material prices
- Environmental pressures will increase (loss of biodiversity)
- Climate change, ocean pollution and land degradation
- More waste production

Circular Economy

Circular Economy

Circular Economy is a strategic concept based upon three principles:

A. Eliminate waste and pollution, through the design of products, services and business models;

B. Keep products and materials in use, preferably at their highest economic and utility value, for as long as possible;

C. Regenerate natural systems, through the regeneration of materials used and of the underlying natural systems.

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Circular Economy

Circular Economy is a strategic concept based on the reduction, reuse, recovery and recycling of materials and energy. Replacing the concept of end-of-life of the linear economy with new circular flows of reuse, restoration and renewal, in an integrated process, the circular economy is a key element to promote the dissociation between economic growth and the increase in resource consumption.

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Circular Economy

The transition from a linear model of production of goods (raw material extraction, production, use and disposal of products) **for a circular model, where the materials are returned to the production cycle through reuse, recovery and recycling,** more than being a necessity is the fact that it has to be a flag for our future!

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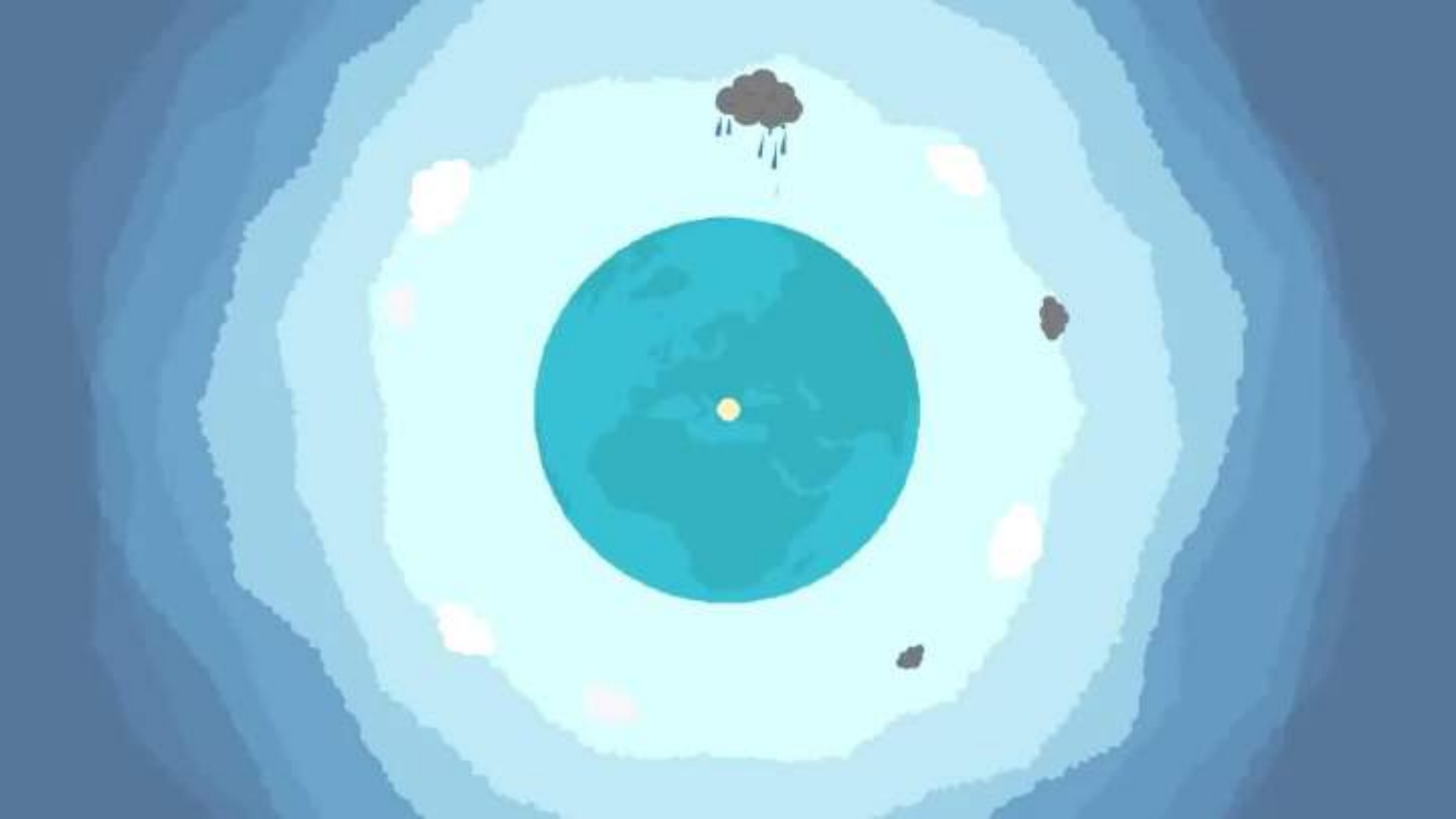

The cap size and “mouth” of pet bottles were reduced by 4 mm,

26,500 kilos of plastic were saved.

The bottles have in their composition 25% recycled PET.

The goal is that by 2023 it will be 50% recycled plastic.

The cork is the most emblematic product of the cork industry, but nevertheless only uses 30% of the raw material.

At Corticeira Amorim, the remainder, as well as the result of the recycling of stoppers, is fully used, giving rise to other applications such as construction materials, furniture and design pieces, high performance surfboards, among other solutions.

GREEN CORK

PROJETO DE RECICLAGEM DE ROLHAS DE CORTIÇA

By delivering obsolete bank cards to any CGD branch they are recycled, transforming them into equipment (ensuring data confidentiality). PVC waste from the destruction of these cards is incorporated into the production of urban furniture parts in 100% recycled plastic. This process has the partnership of Extruplás, a company responsible for the collection and recycling of cards, as well as the production of urban furniture pieces that Caixa offers to institutions of social solidarity.

"The Earth has enough for our needs, but only what is necessary."

— Mahatma Gandhi —

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CONSUMPTION


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PEPSI
Coca-Cola
Academia
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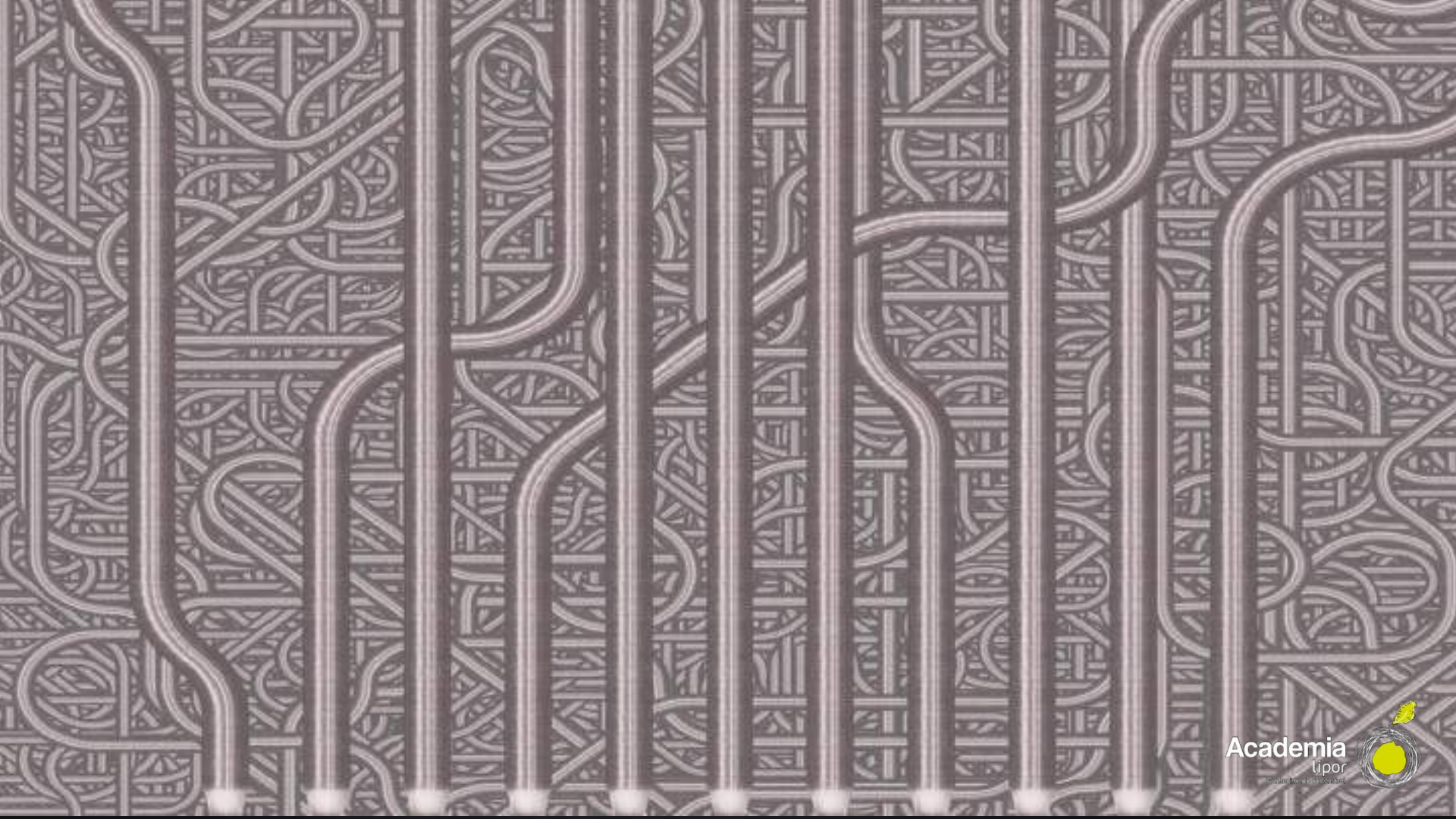
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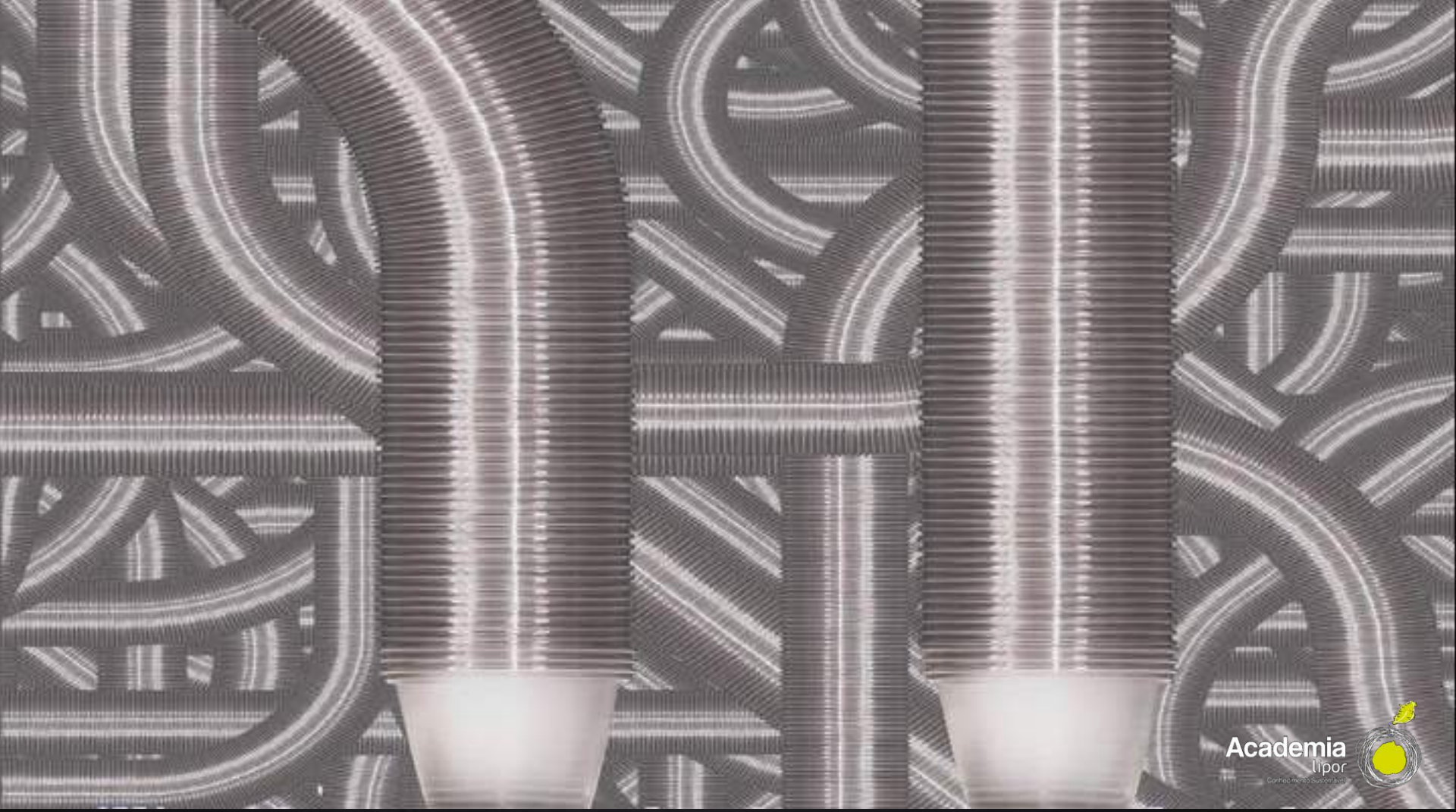
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Ecological Rucksack

The Ecological Rucksack can be defined as the sum of all materials mobilized and used for the production of consumer goods throughout their life cycle.

The products are like an Iceberg, the visible part is much smaller and weighs much less than what is behind in its production

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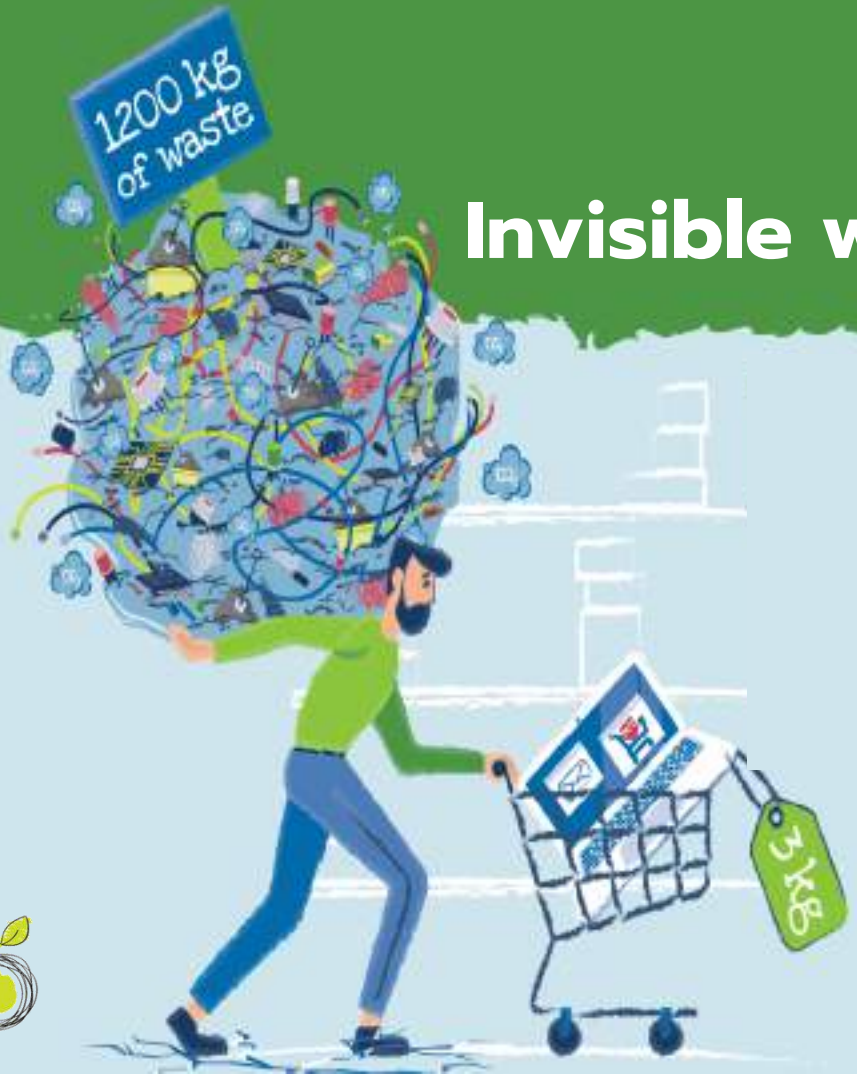
Invisible waste



All waste generated in production and throughout the life cycle of a good or service.

We don't see them, but they have an impact on the environment, on nature, on the planet.

All these wastes are related to the consumption of water and energy, cultivation, extraction, treatment and transport of raw materials, manufacture and transport.

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Unboxing #invisiblewaste

Ecological Rucksack

Quantity of materials required during manufacture:

Computer chip (0.09 g) - 20 kg;

Computer (3Kg) – 1200 Kg

Pair Jeans – 25 Kg

Automobile - 15,000 kg;

Toothbrush - 1.5 kg;

T-shirt - 1,500 kg;

Coffee maker - 285 kg;

Mobile phone - 75 kg.

Gold Ring – 5 ton

Conscious consumption is consuming responsibly, thinking about the consequences of our acts of purchase on the quality of life on the planet and on the lives of future generations.

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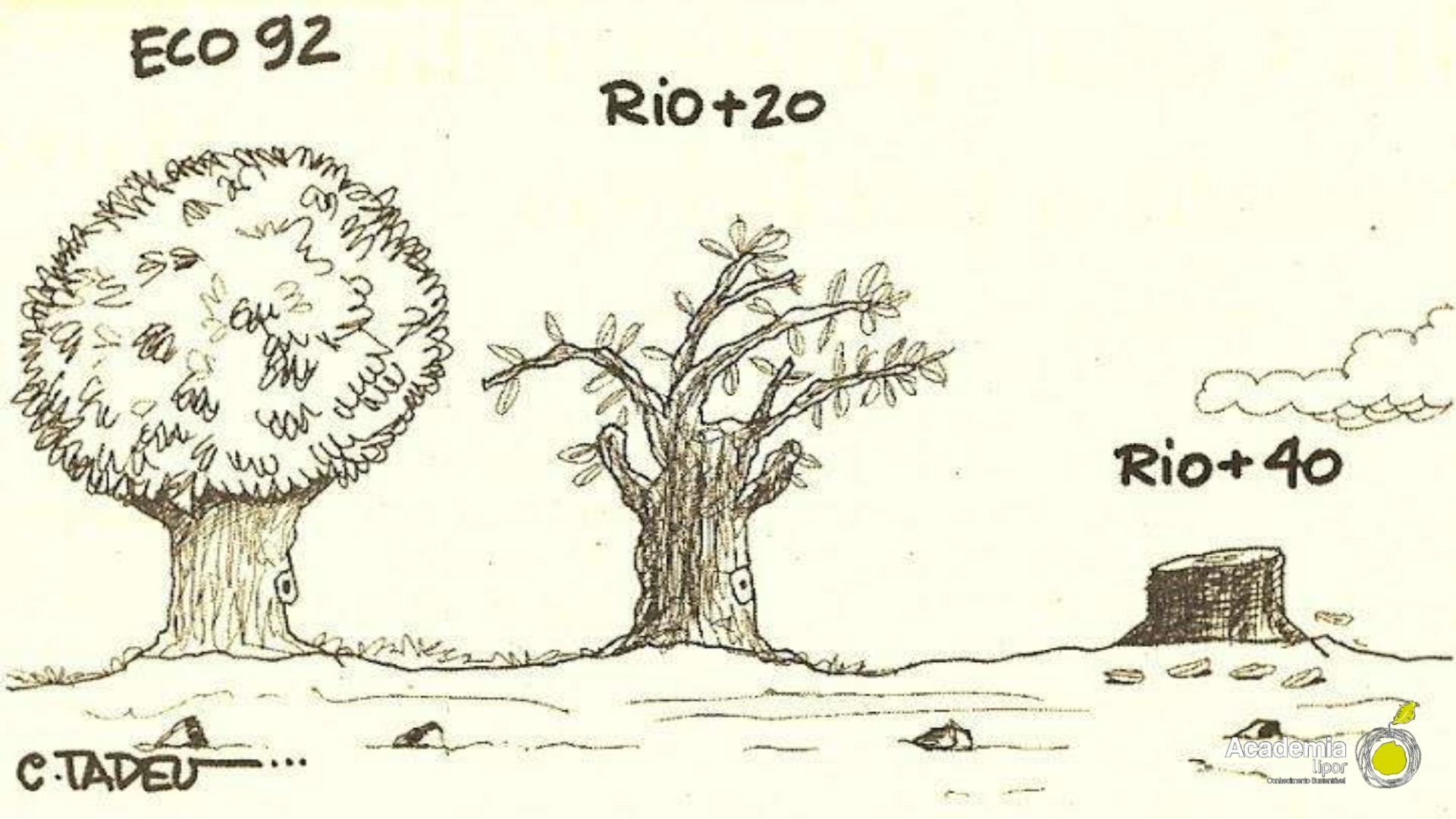
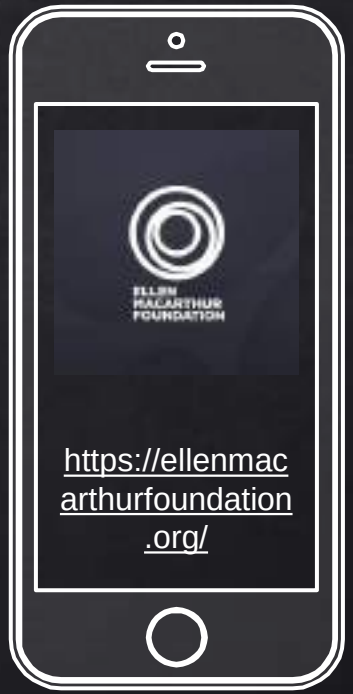
1. Plan your shopping
2. Don´t go shopping on na empty stomach
3. Evaluate the impact of your consumption
4. Consume only what you need
5. Reuse products and packaging
6. Sorte your waste
7. Promote conscious consumption
8. Don’t buy counterfeit products
9. Give our ideas for improve products and services


ECO 92
Rio+20
Rio+40
C.TADEU

RESOURCES

https://www.globalgoals.org/



https://ellenmacarthurfoundation.org/

https://bcsdportugal.org/economia-circular/

Waste Management

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Definition of waste:

"Any substances or objects that the holder discards or intends or is obliged to discard, namely those identified in the European Waste List"

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Waste: Nothing is lost everything can be transformed

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Waste Management a challenge for everyone

Waste Management is a topic that requires a complexity of technical, administrative and financial operations necessary for the deposition, collection, transport, treatment, recovery and disposal of waste, including the planning and inspection of these operations, as well as the monitoring of places of final destination, after their closure

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WASTE MANAGEMENT SYSTEM

The need to create Waste Management Systems is due to the increase in waste production that is directly related to human activities and population growth. The concept “Consumer Society” gained relevance and started to be referred to very frequently in current vocabulary. The era of disposables, “using and throwing away” was introduced.

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Garbage Vs Waste

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THE "GARBAGE" OF SOME ARE OTHERS RESOURCES

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Garbage

Dump

Landfill

Throw

Disorder

Dirt

Smel

Useless

Mix

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Linear Economy

Without ~~R~~ecycling

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Waste

Useful

Organize

Resourse

New

Clean

Circularity

Recycle

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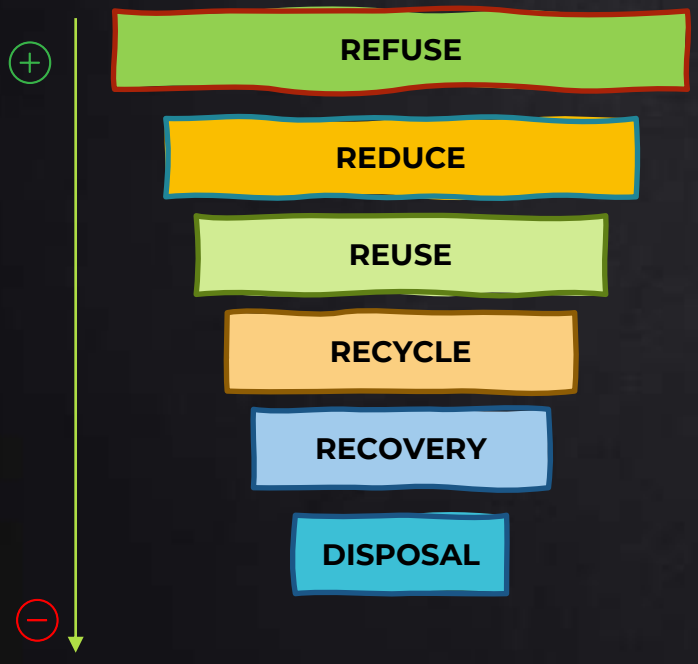
Circular Economy

WITH Recycling

WASTE = RESOURSE

Waste Management Hierarchy



The waste management hierarchy determines the priority of treatments and forms of recovery to be given to waste. According to this model, waste is seen as a resource

PROPER WASTE MANAGEMENT STARTS WITH PREVENTION.

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REFUSE

to buy wasteful or non-recyclable products

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Refuse

Over-packaged products

the use of single-use plastic

Straws in fast food chain restaurants

Unaddressed advertising

Products containing microplastics (App Beat the Microbead)

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REDUCE

Reduce the use of harmful, wasteful, and non-recyclable products.

to produce less

THE BEST WASTE IS THE ONE THAT'S NEVER PRODUCE !

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Reduce

Avoid products with excess packaging

Store food in reusable containers, and not in aluminum foil or plastic film

Use reusable bags;

whenever possible buy rechargeable products

Avoid using tissues and paper napkins

REUSE

Reuse objects for the same purpose that they were created or give them a new use.

Creatively use “waste” materials to create new products, giving them a new value (UPCYCLING).

Reuse

The shopping bags several times;

Toys and clothes that are no longer used. They can be use by other children;

Create a “bank of things”

Book swap

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RECYCLE

FROM OLD MAKE NEW THINGS

Saves water, energy and raw materials

Circular economy

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Recycle

Use the recycling bins to sort your waste

For large volumes you use the recycle center

Use your biowaste to make home composting

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Glass

- Wine bottles
- Beer bottles
- Yogurt jars
- Canning jars
- Perfume and cosmetic bottles

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Paper and Cardboard

- Cereal boxes
- Cookie boxes
- Egg boxes
- Shoe boxes
- Paper bags
- Card from toilet and kitchen paper rolls
- Moving boxes
- Newspaper and magazines
- Writing / printing paper

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Liquid Food, Plastic and Metal Package

- Water and juice bottles
- Liquid and solid yogurts
- Shampoo and shower gel bottles
- Detergent and fabric softener packs
- Bottles of cooking oil
- Drink and wine packages (LFP)
- Packets of cream and tomato paste
- Plastic bags
- Food and drink cans
- Spray cans
- Aluminum trays

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Do velho faz-se novo
Teddy bear 6 plastic bottles
Watering can 60 shower gel packages
Playing cards 9 cereals boxes
Scarf 2 plastic packages
Glass bottle 1 glass bottle
T-shirt 3 plastic bottles (1Lt)
Polar coat 10 plastic bottles
Magazine 5 paper sheets
Toy 18 metal cans
Park bench 670 metal cans
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REEDUCATE

Small gestures,

big changes...

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Reeducate and Educate

- Change our consumption habits
- Don't throw cigarette butts on the floor
- Don't use the toilet as a wastebasket
- Get the word out

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English

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Painel de Controlo

Emissões de carbono evitadas em 2021

Valorização Orgânica

1 954

t de CO_2 evitadas

Valorização Multimaterial

57 815

t de CO_2 evitadas

Valorização Energética

Sucata + Energia produzida

57 534

t de CO_2 evitadas

Metas Lipor em 2022

Diminuição da Deposição de RUB em Aterro

Preparação para Reutilização e Reciclagem

Retomas com Origem em Recolhas Seletivas

ENVIRONMENTAL EDUCATION

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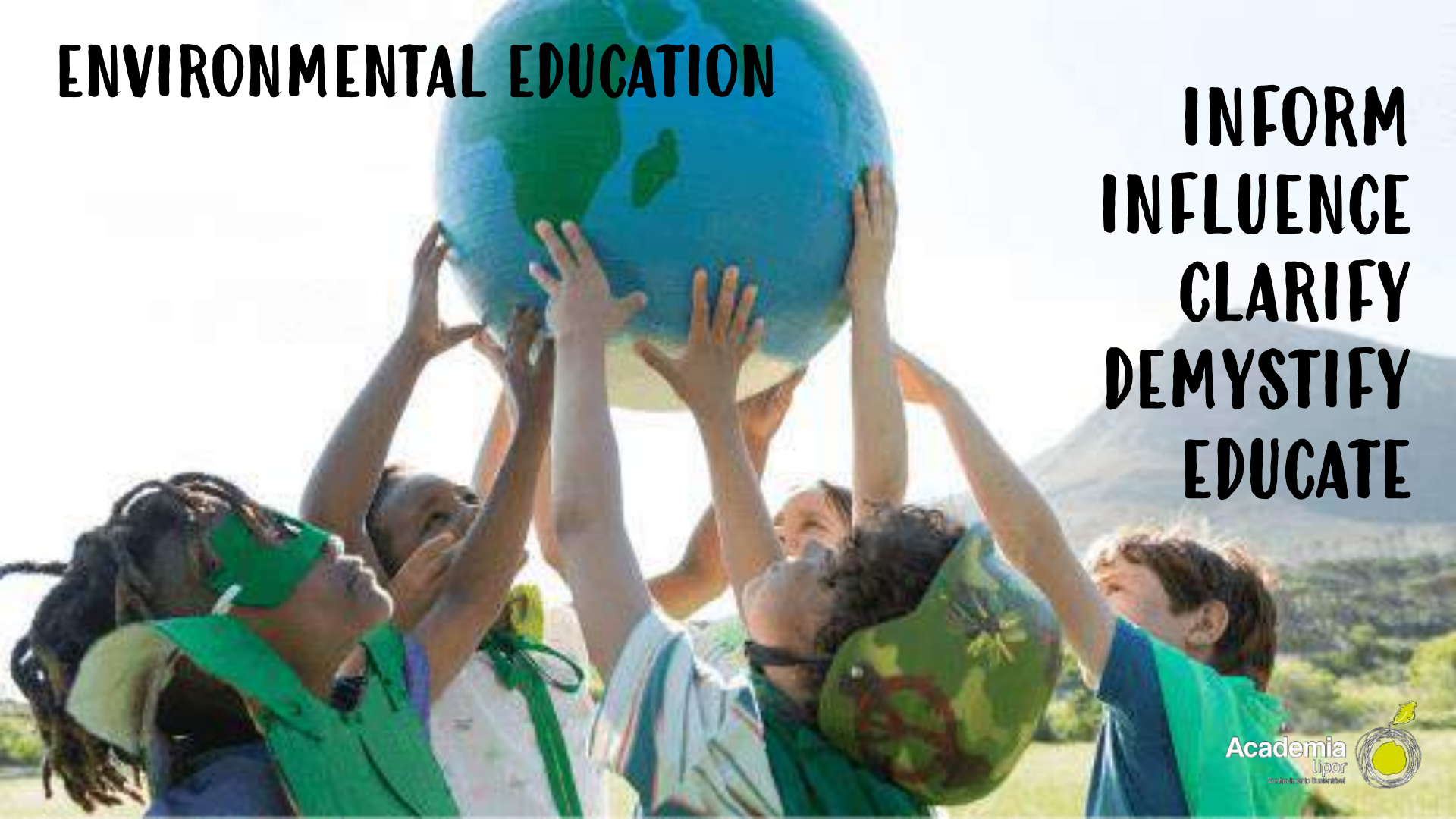
ENVIRONMENTAL EDUCATION

INFORM
INFLUENCE
CLARIFY
DEMYSTIFY
EDUCATE



ENVIRONMENTAL EDUCATION

"A permanent process in which individuals and the community become aware of their environment and acquire knowledge, skills, experiences, values and the determination that make them capable to act, individually or collectively, in the search for solutions to present and future environmental, problems."

Fonte: UNESCO, 1987

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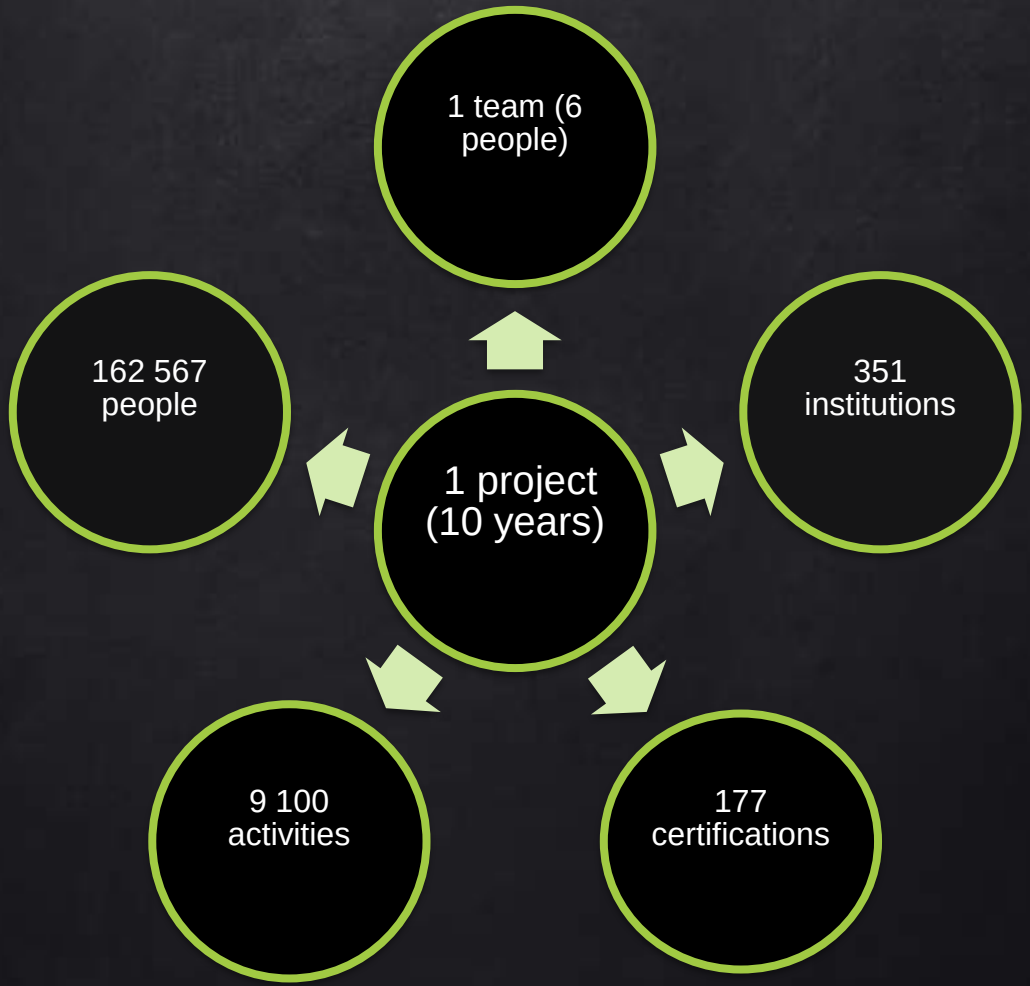
Lipor
Geração +

The Geração+ (Generation+) Project is an educational project, aimed at public and private schools, as well as social institutions or other associations and entities located in the LIPOR Municipalities that intend to change their environmental management practices. We promote the commitment of citizens to good environmental practices, making it easier to acquire skills that promote a greater civic intervention.

Phases of the project


1 team (6 people)
351 institutions
177 certifications
9 100 activities
162 567 people
1 project (10 years)


PAPEL & CARTÃO
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:Padlet

LIPOR Geração + • 1 • 2h

Geração +

Sê um CORAÇÃO VERDE!

LIPOR

LIPOR Geração + 22d

Mil Primaveras... na Casa do Corim!

Geração +

LIPOR Geração + 6M

Fluxograma do Projeto

PDF

Fluxo_Educacao_PLO_1

27 0

Pacto Português para os Plásticos

LIPOR Geração + 3M

Olá, eu sou o PAC! Vamos *reinventar o futuro* e *salvar o planeta*? Sabe mais aqui!

5 0

Conteúdos BIO

LIPOR Geração + 23d

Guia de Práticas de Manutenção Sustentável de Florestas

PDF

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GUIA
PARA UM
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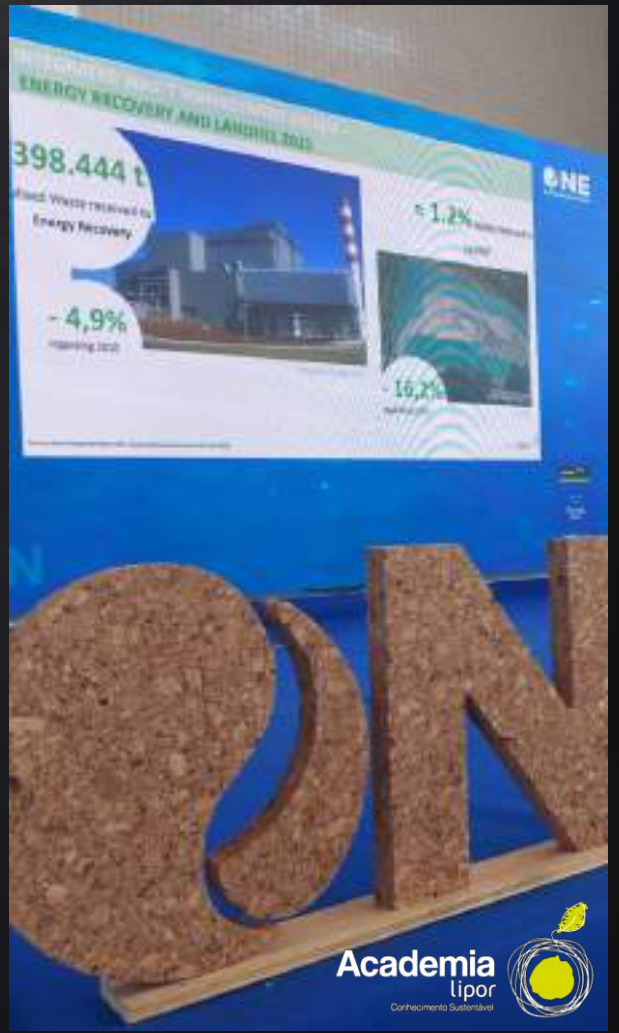
40 lipor


ENERGY RECOVERY AND LANDFILL 2013
398.444 t
Energy Recovery
- 4,9%
+ 1,2%
- 16,2%
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the Plastic

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RallyForRivers.org
#RallyForRivers
RallyForRivers.org
GIVE A MISSED CALL
80009 80009

The plastic

These characteristics make this material very useful for different areas, from health, food to industry.

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Types of plastics

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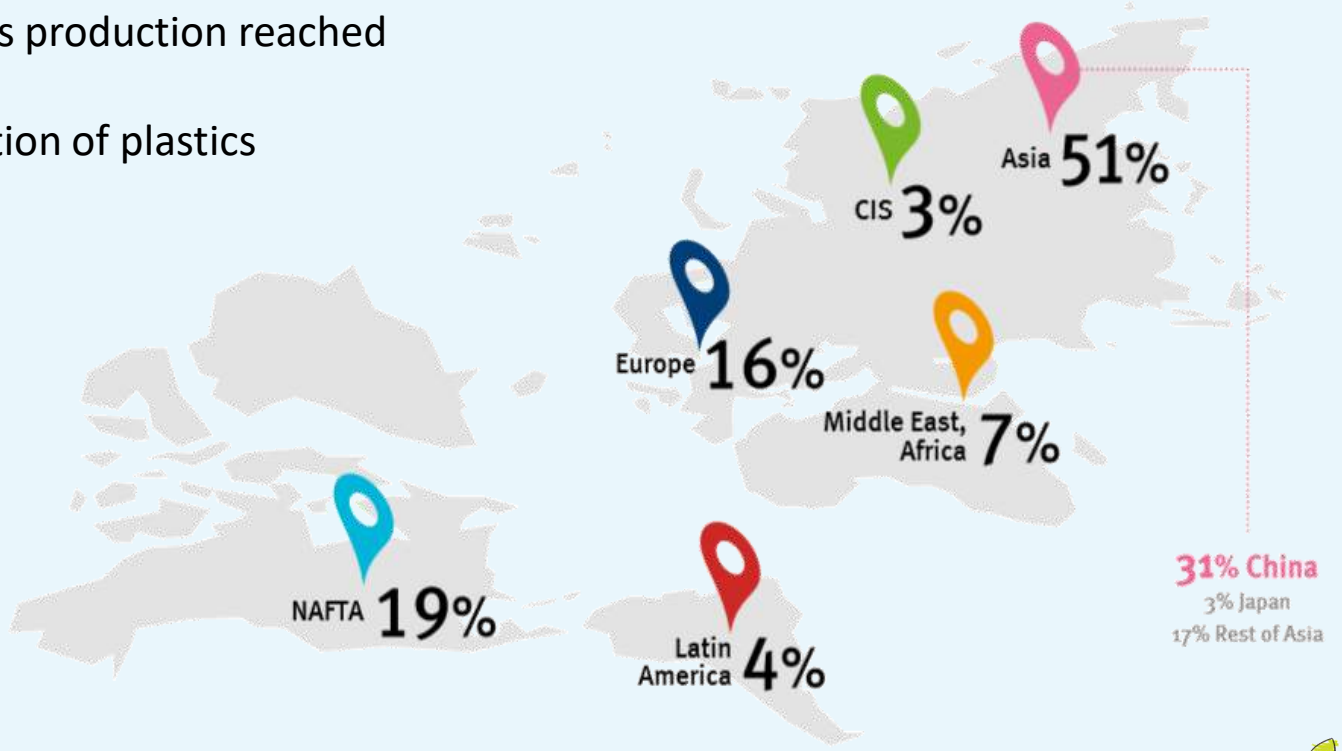
WORLD PLASTIC PRODUTION

In 2019, global plastics production reached 370 million tons.
In Europe, the production of plastics comes to almost 58 million tons.



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Fonte: PlasticsEurope - Plastics – the Facts 2020

Plastic prodution

Plastic is one of the most used materials in our daily lives, from its use in packaging, in buildings, cars, electronics, agriculture and other applications.

Fonte: PlasticsEurope - Plastics – the Facts 2020

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Single use plastic

They are materials widely used because they are practical, cheap, light and do not need to be washed. They are produced to be used in a short space of time and destined for a single use only, being therefore discarded immediately.

THE OCEAN

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The ocean

The Ocean is a single interconnected water body, and it occupies 70% of the planet's surface.

It consists of several basins:
Atlantic
Indian
Pacific
Arctic and Antarctic.

The relief of these ocean basins could be: seamounts, abyssal plains, underwater mountain ranges and oceanic trenches.

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Marianas Trench


Great Reef Barrier


Kelp forests


Mid-Atlantic ridge
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Ocean threats

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Main threats

The Oceanic Ecosystem is one of the richest, however and due to decades of irresponsible exploitation, they have put the ocean at an alarming level of degradation.

There are currently three main threats to the ocean:

Overfishing

Climate change

Pollution

MARINE LITTER

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Marine litter

Any material of anthropogenic origin, manufactured or processed (regardless of size) that is discarded, disposed of or abandoned on land (which may be washed out to sea through rivers, sewage, rain and wind) or at sea.

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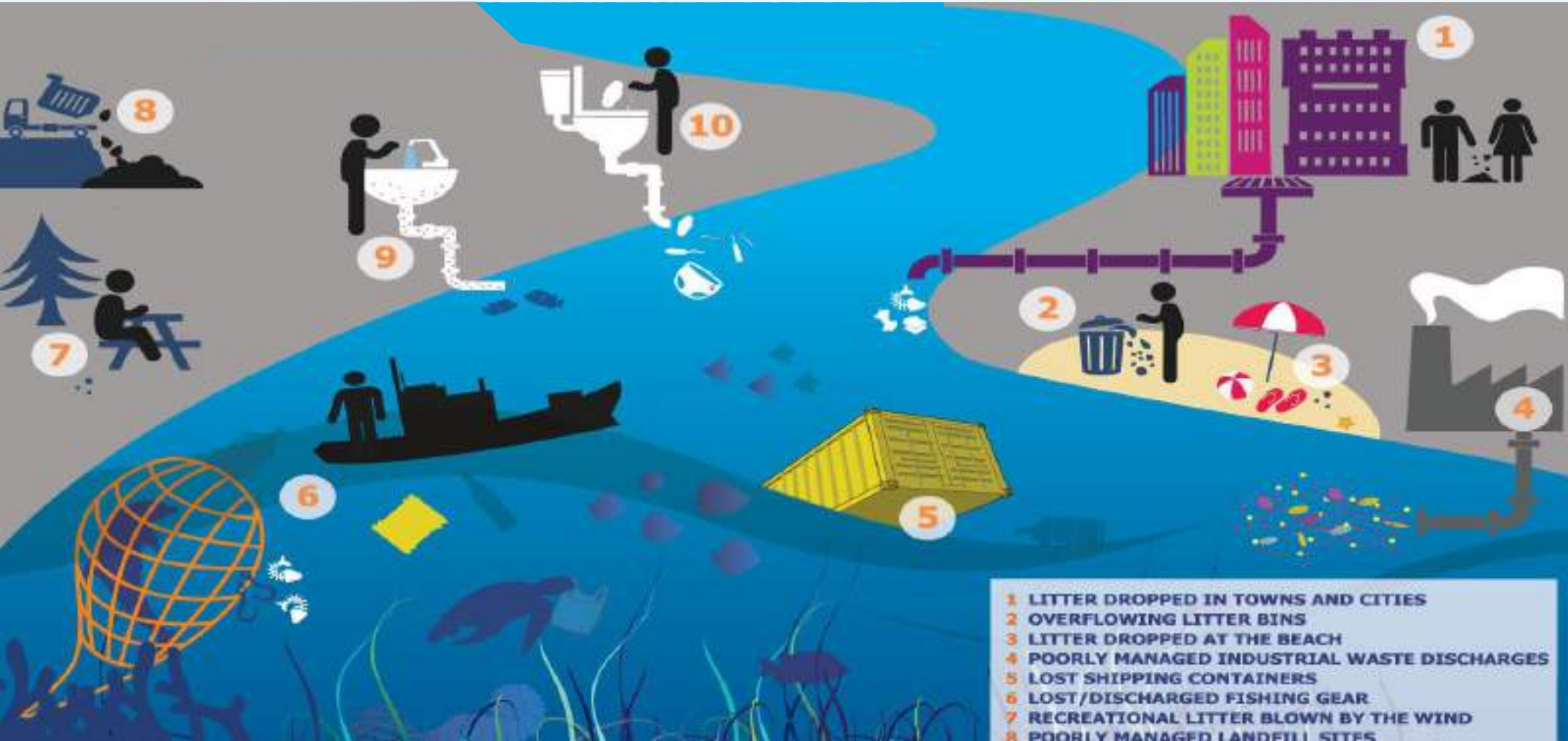
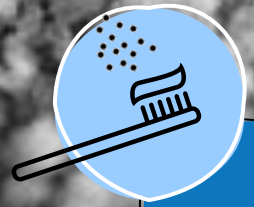
Marine litter origins





Primary microplastics

These are plastic fragments or particles that are 5 mm in size or less before entering the environment. The main sources are: Tire wear while driving; personal care products, e.g. microbeads in facial scrubs, make-up, toothpaste

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MICROPLASTICS SECONDARY

are created from the degradation of larger plastic products when they enter the environment through the wear and tear of time and the elements, such as plastic bags, bottles, straws, etc. These account for 69% to 81% of microplastics found in the oceans

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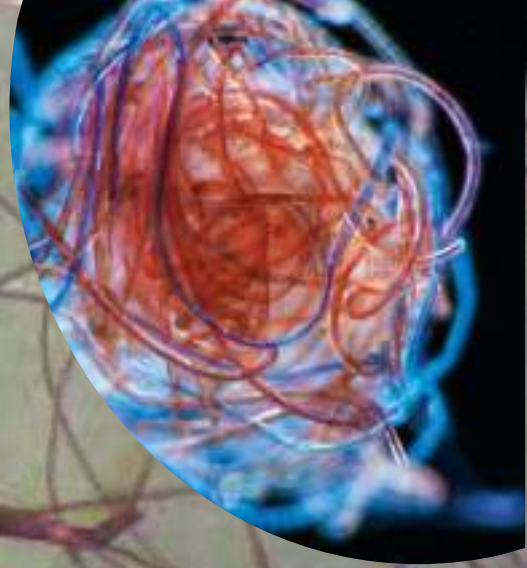

PLASTIC MICROFIBERS

These are synthetic fibers, such as polyester or nylon, that are used to make clothes and fishing nets and lines. Through general wear, washing and drying, the fibers can separate forming microplastics (they can also be considered secondary microplastics

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The Lifecycle of Plastics

Plastic bag
20 years

Coffee cup
30 years

Plastic straw
200 years

6-pack plastic rings
400 years

Plastic water bottle
450 years

Coffee pod
500 years

Plastic cup
450 years

Disposable diaper
500 years

Plastic toothbrush
500 years

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