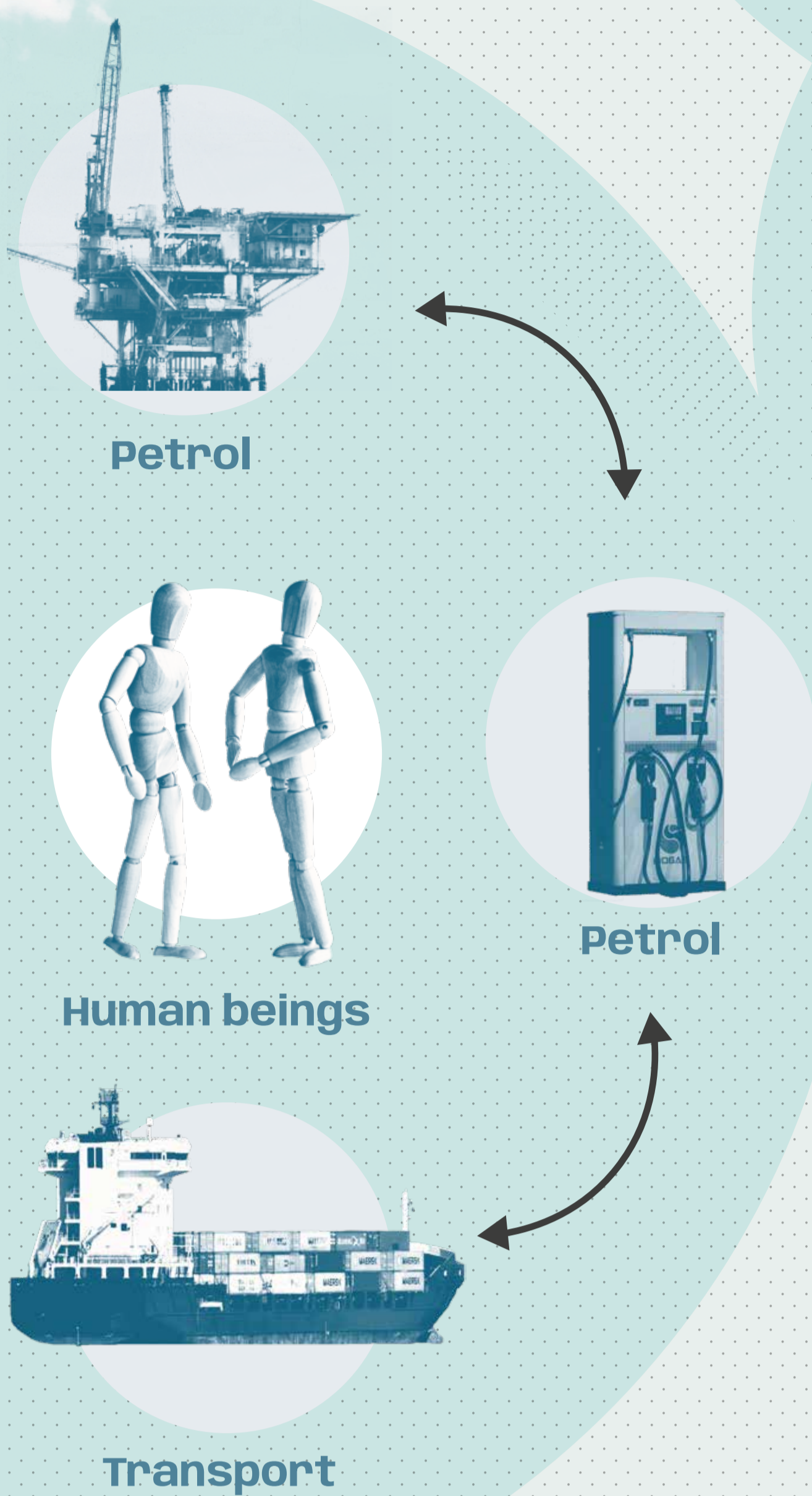


# Climate change

are long-term changes in the climate of Planet Earth - average atmospheric conditions of a region or geographical area.

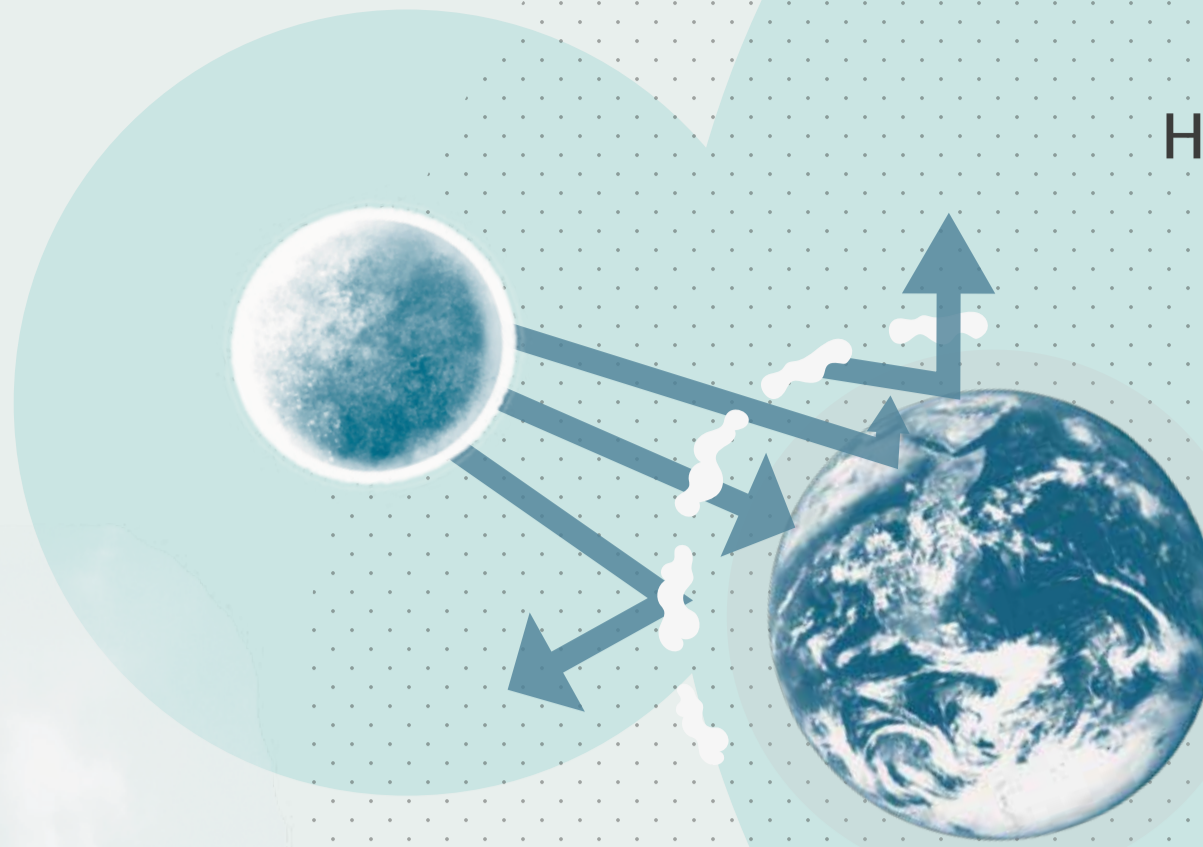
# CO<sub>2</sub>

These changes are accelerating due to human action, the main cause being the **emission of greenhouse gases** - such as carbon dioxide (**CO<sub>2</sub>**) - into the atmosphere from fossil fuels such as oil (diesel, petrol, etc.) and coal, used in energy production, industry or transport.



## Greenhouse effect gases

create a layer that retains the sun's heat and allows life to exist on Earth. However, when there is too much of them, they cause what is known as global warming - an increase in the average temperature of the planet.



More intense droughts



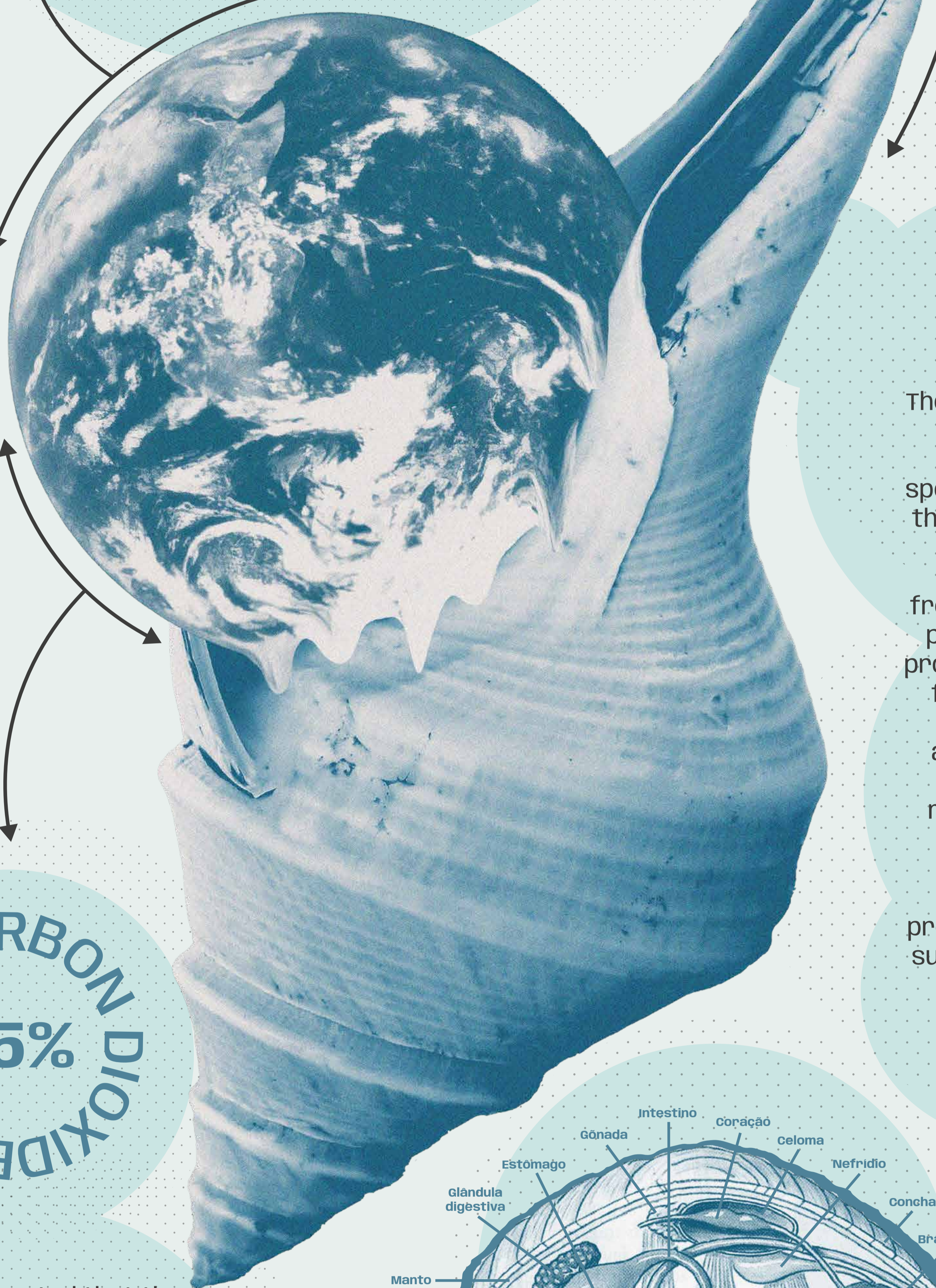
Melting ice on the polar ice caps



Rising sea levels

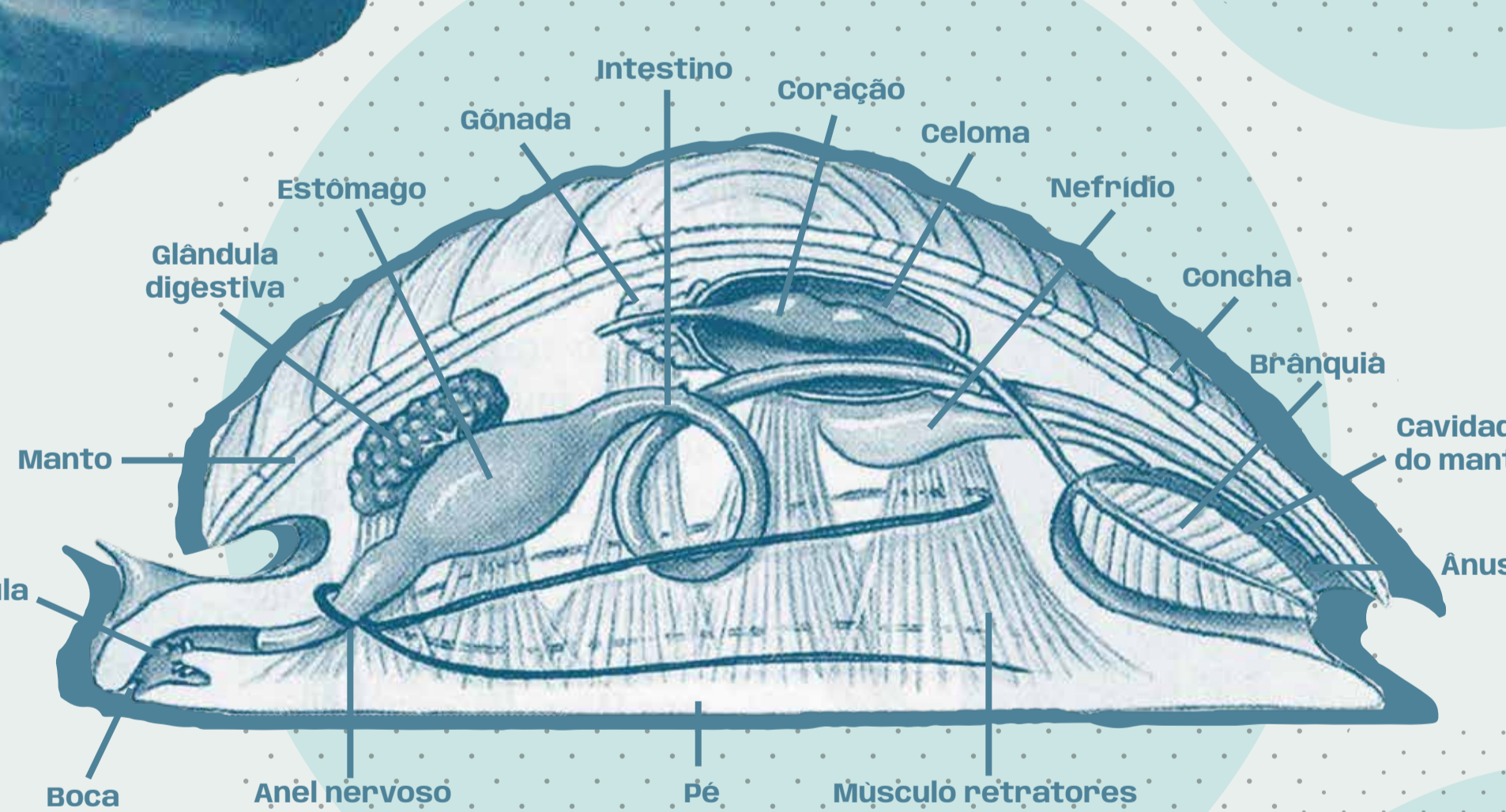


Stronger hurricanes



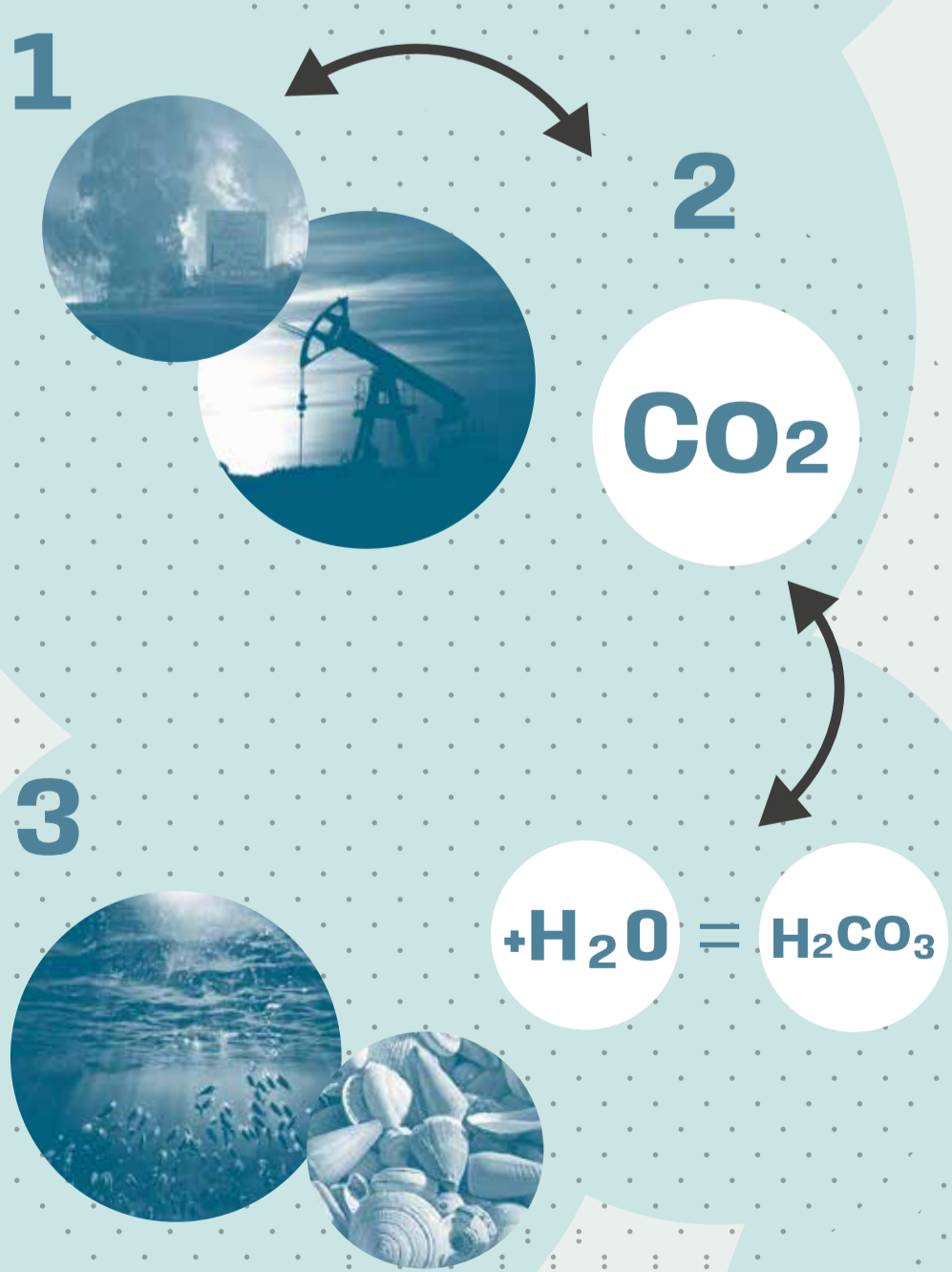
## Mollusc shells

The shell of molluscs, such as limpets and clams, is produced by specialised cells located in the mantle of the mollusc. Calcium ions and carbonates absorbed from the sea react with a protein called conchiolin, produced by the animal, to form calcium carbonate crystals that accumulate and grow to form the shell. As the mollusc grows, layers of shell are added. The shell is vital for molluscs and provides protection and structural support, allowing some to fix and helping others to fluctuate.



CARBON DIOXIDE  
25%

It is estimated that the **ocean absorbs around 25 per cent of carbon dioxide emissions** and that, when it dissolves in seawater, it changes the ocean's pH, making it acidic - ocean acidification.



This leads to an increase in hydrogen ions and a decrease in the carbonates needed by many marine organisms to produce their skeletons, shells and carapaces.

In addition to the importance of these animals in the ocean, shells have played important roles in **human history**. From food, to use as currency, symbols of power, primitive tools, collecting, extraction of pigments or building materials, there have been many uses for these exoskeletons throughout history.



In addition to the difficulty in shell production (more fragile shells), the acidification of the ocean can lead to the dissolution of calcium in existing shells and other exoskeletons. These consequences can have an impact on marine ecosystems, as these animals play a fundamental role in the ocean's balance.

**Mitigating the effects of our actions on climate change** is a global challenge that requires individual action. Reducing greenhouse gas emissions and marine pollution, conserving marine ecosystems, responsible fishing and consumption of fish and shellfish, raising awareness and scientific knowledge are all part of the solution!  
**We can all take action to preserve these incredible and essential animals.**