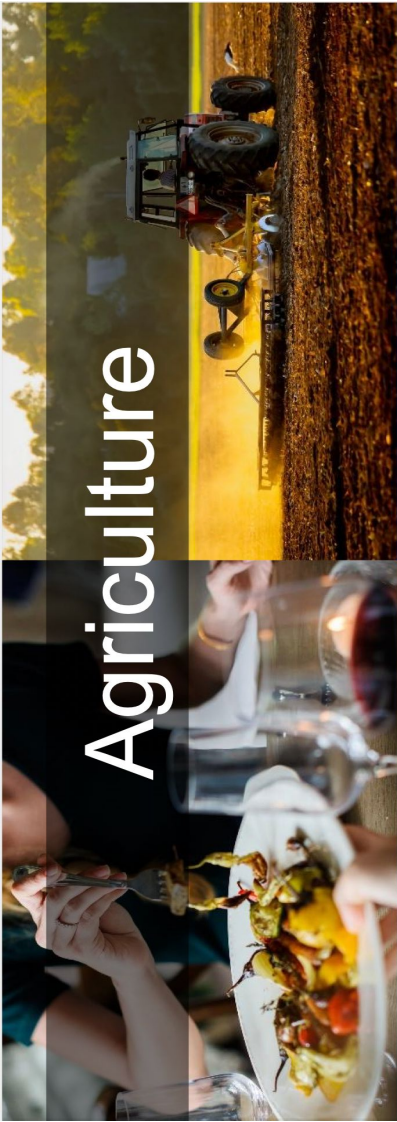




Agriculture

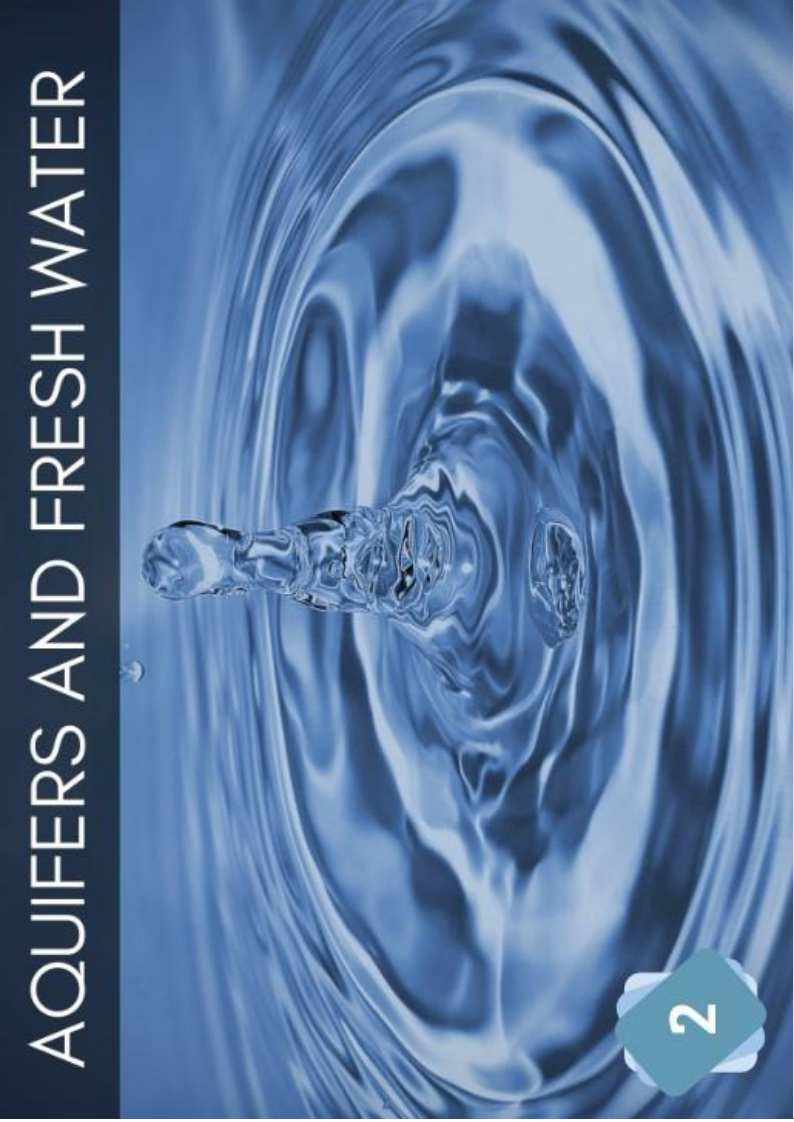
8



CULTURAL HOMOGENIZATION



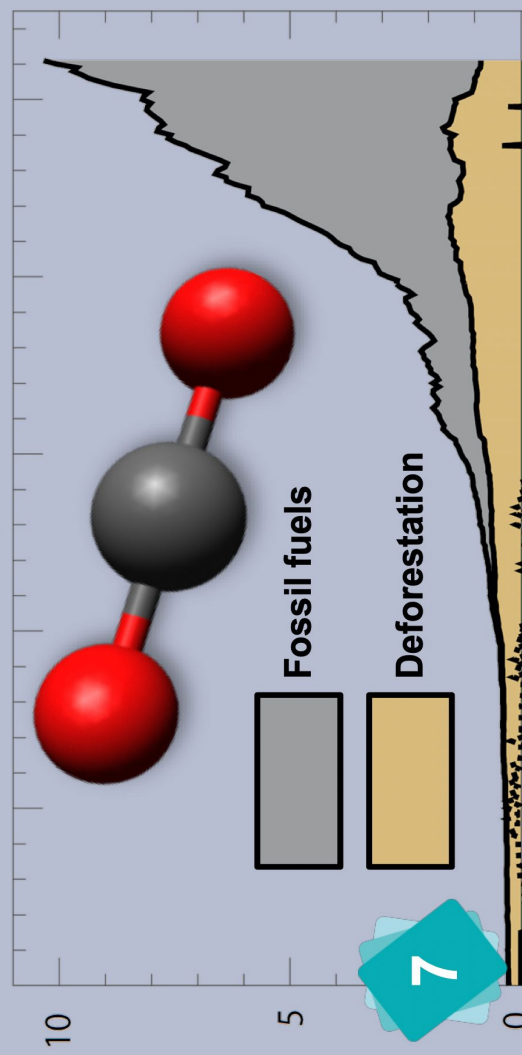
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2

CO₂ Emissions

Anthropogenic CO₂ emissions (GtC/yr)



7



Groundwater is a limited and vulnerable resource that is used for drinking water, agriculture and industrial applications. The overexploitation of coastal aquifers causes the salinization of aquifers, that is, a process of saline intrusion takes place in water bodies or ecosystems located in coastal areas. For example, in the Valencian Community, the aquifers present problems of seawater intrusion.

BONUS SET



Agriculture does not emit much CO₂ but does emit large quantities of methane (from cattle and rice paddies) and nitrous oxide (from fertilizers).

In all, agriculture accounts for 25% of GHGs if we include the induced deforestation.

Set 2



CO₂, or carbon dioxide, is the main anthropogenic (produced by human activities) greenhouse gas in terms of emissions. These emissions come from our use of fossil fuels and from deforestation.

Set 1



Homogenization: The process by which differences between biotic communities in different areas are reduced towards an average.
Globalisation of selected products.

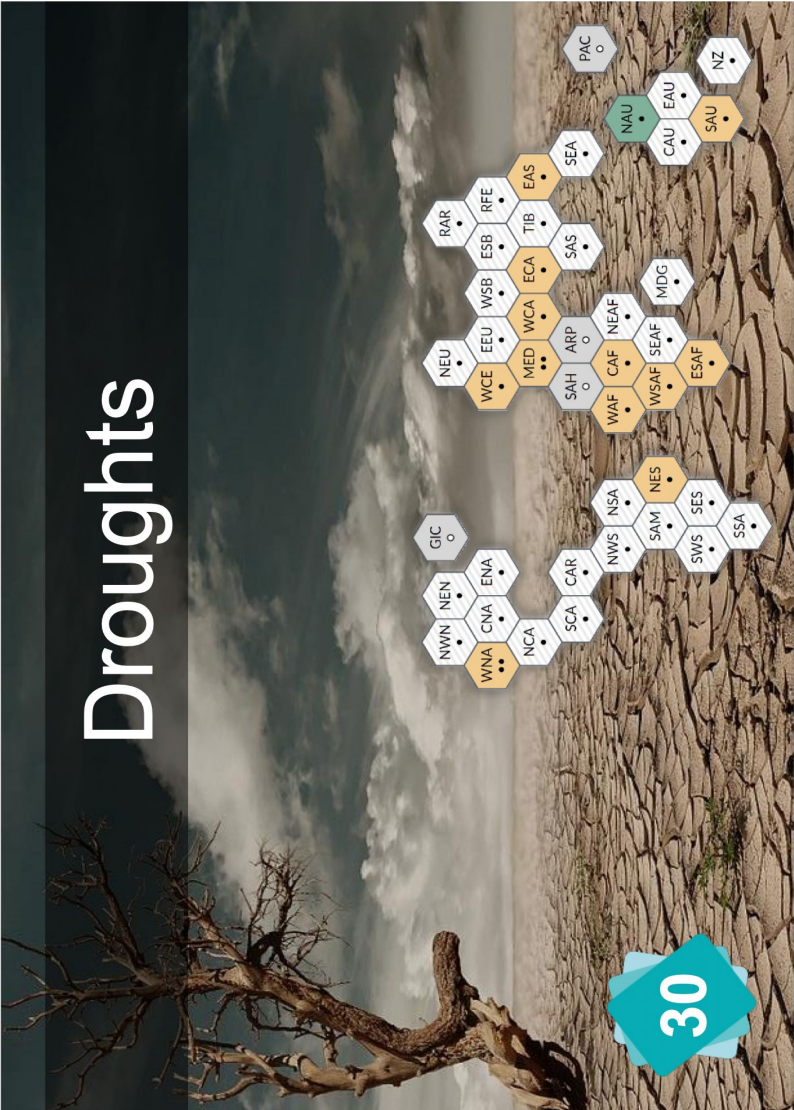
BONUS SET

Decline in Agricultural Yields



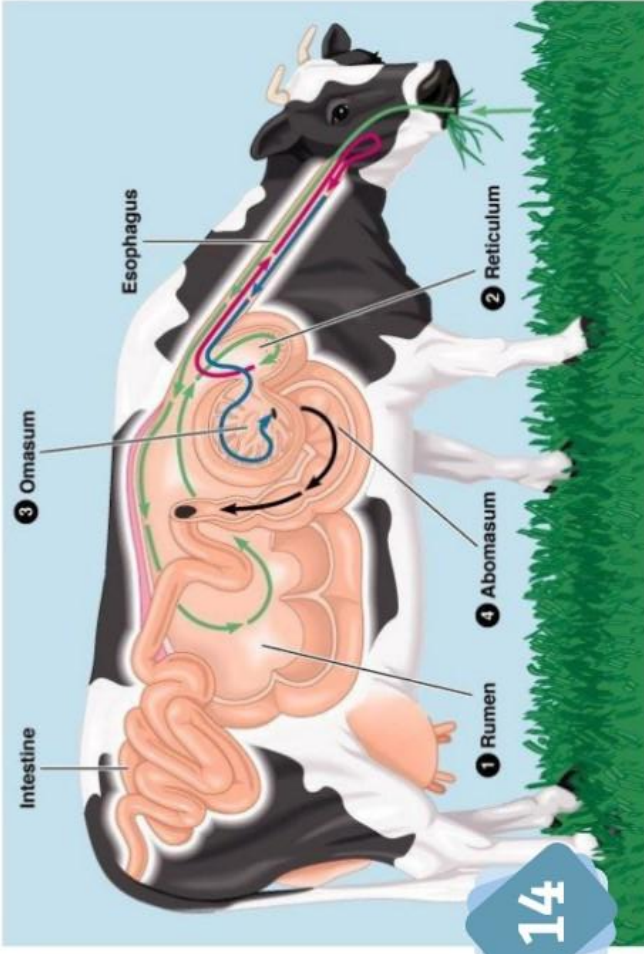
32

Droughts



30

DIGESTION MECHANISMS



14

FIRE AND DEFORESTATION



9

14



Cattle and in particular cows emit methane from their digestion within the rumen, indeed it hosts microbes that enable digestion of the cellulose in the eaten plant material. Thus, fatty acids are formed that enable the supply of energy to the cattle, CO₂ and methane exhaled through the mouth.

BONUS SET

32



Food production can be affected by temperature, droughts, extreme weather events, floods and marine submersion (e.g. the Nile Delta).

Set 5

9



Forest fires cause significant environmental damage, even when they do not effectively clear the affected areas. Not only do fires make forests less resilient to future damage, but they also interfere in the provision of ecosystem services, compromising forests' ability to capture and store carbon.

BONUS SET

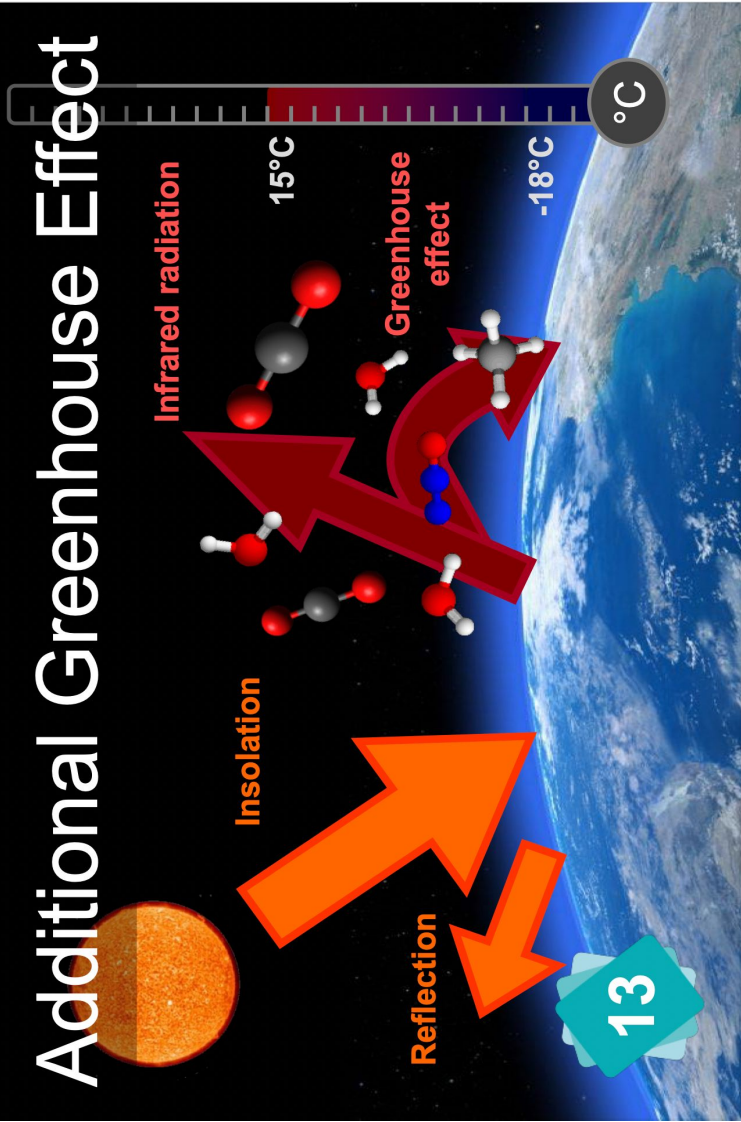
30



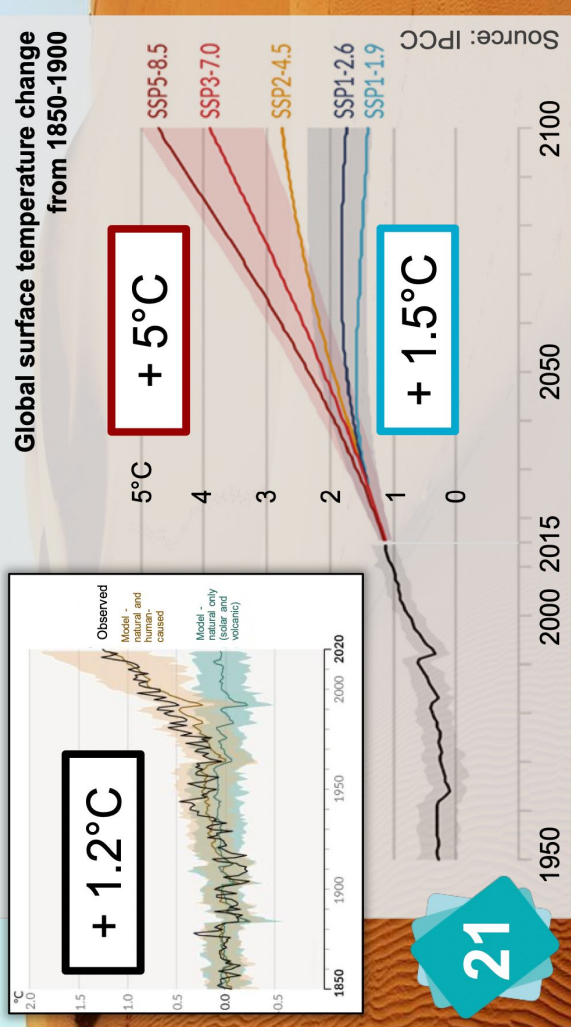
The disruption of the water cycle can both increase and decrease rainfall. A lack of rain can cause drought. Droughts are likely to become more frequent in the future.

Set 4

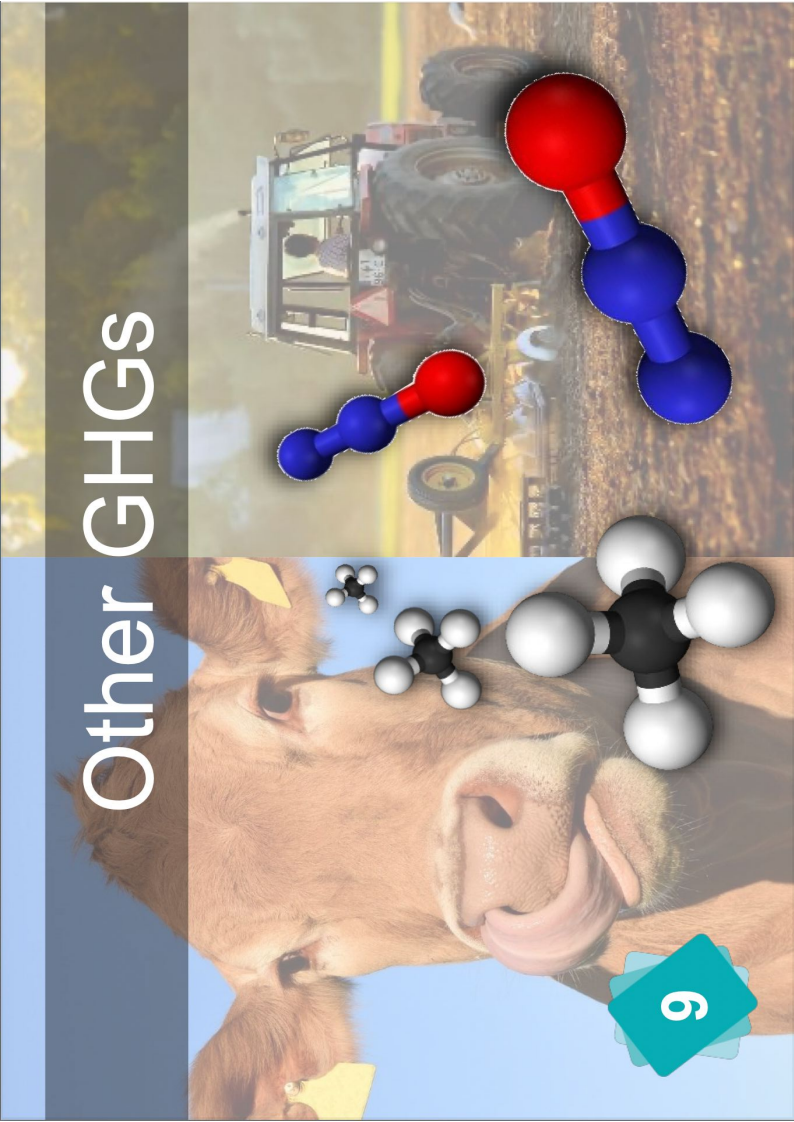
Additional Greenhouse Effect



Rising Air Temperatures



Other GHGs



POVERTY AND HUNGER





The average air temperature at the surface of the Earth has increased by 1.2°C since 1900. Future emission scenarios predict that this increase will reach between 2 and 5°C by 2100.

During the last ice age 20,000 years ago, the average air temperature was only 5°C lower than today and warming up took 10,000 years.

Set 1



The greenhouse effect is a natural phenomenon - incidentally, the most common GHG is water vapour. Without the greenhouse effect, the planet would be 33°C colder and life as we know it would not be possible.

But CO₂ and other GHGs related to human activities amplify the greenhouse effect and unbalance the climate.

Set 1



**THE CLIMATE
COLLAGE**
The Cards are in your hands!



In less developed countries, where agricultural yields are lower and the land is filled with toxic chemicals, the health of populations is slowly deteriorating. Hunger is on the rise in many places where agriculture is declining.

BONUS SET

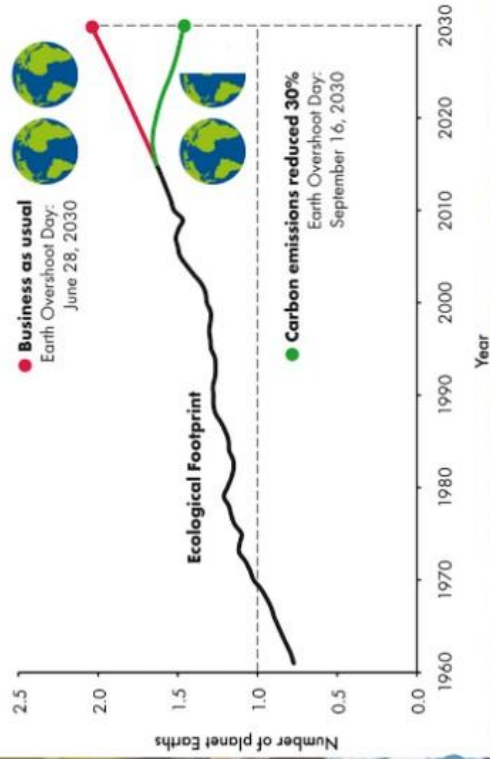


CO₂ is not the only greenhouse gas (GHG). Among others are methane (CH₄) and nitrous oxide (N₂O), both of which mainly come from agricultural activities.

Set 2

RESOURCE OVEREXPLOITATION

How many Earths does it take to support humanity?

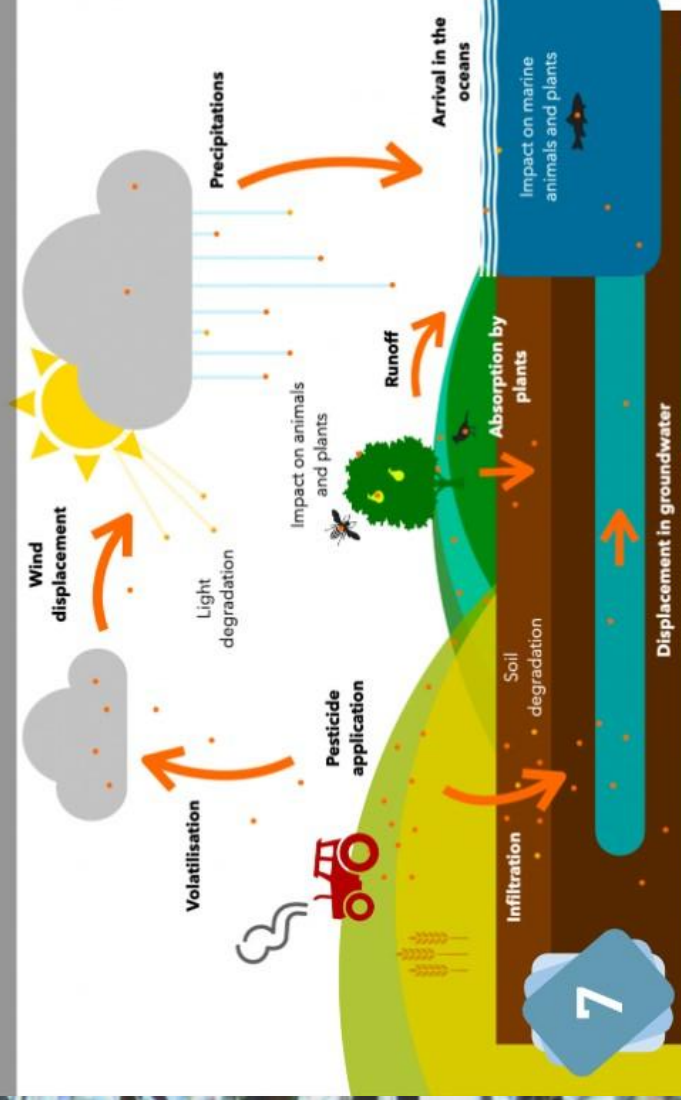


5

Human activities

1

PESTICIDE CYCLE



7

THE LOSS OF BIODIVERSITY



8



Pesticides used to increase agricultural yields end up in the soil, air and water. They then impact all biodiversity: plants and animals, especially pollinating insects and birds, and the aquatic life of streams and oceans. As they are found in water, in the products we consume and in high concentrations in agricultural areas, they also impact our health.

BONUS SET



Because of the resource overexploitation biodiversity is in decline. Deforestation and land degradation leads to the disparition of species habitat. Biodiversity is an integral part of all agricultural production, but forms of agriculture based on the homogenization of practices and landscapes lead to its reduction and often constitute a threat to ecosystems.

BONUS SET



The overexploitation of natural resources is leading to the disruption of the food chain. As a result of the globalisation of selected products. Overexploitation also leads to changes in land use and increased pollution. Soil life is disappearing and the soil is no longer usable.

BONUS SET



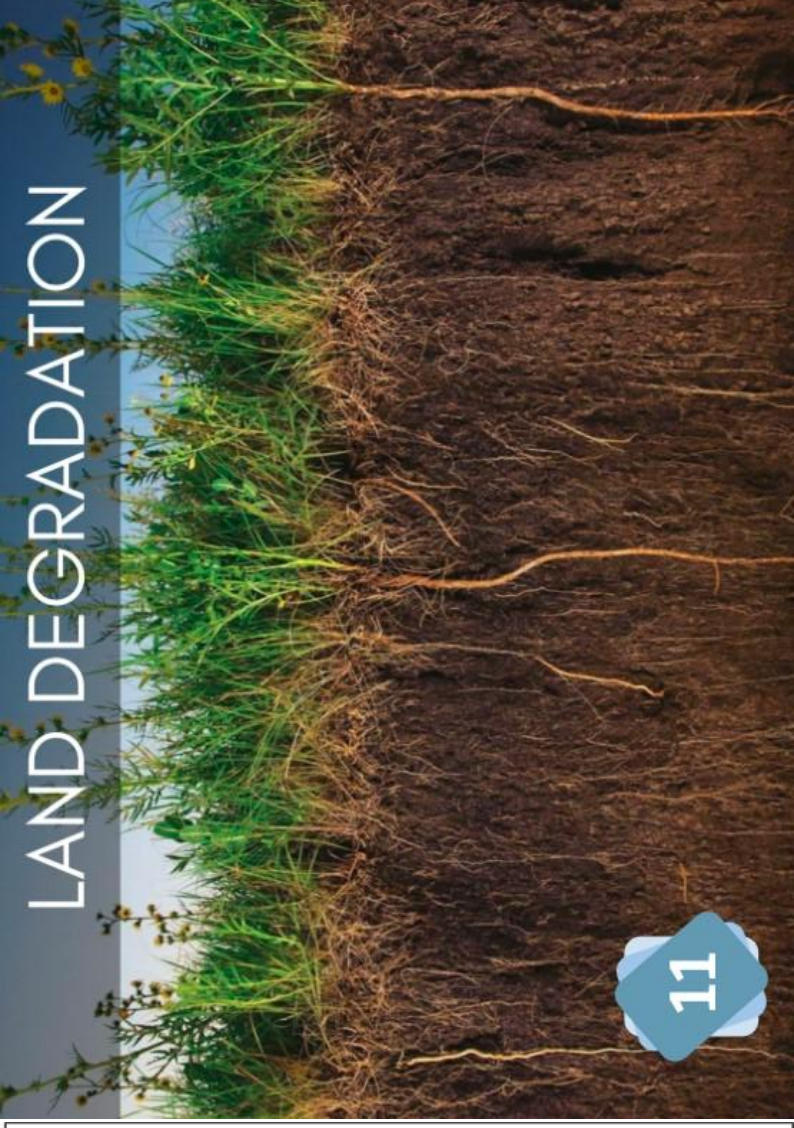
This is where it all begins...

Set 1



Soil is considered degraded when it has lost some of its functions, such as feeding plants or animals, filtering water or hosting biodiversity. Soil degradation is due to various physical (erosion, compaction, excess or lack of water), chemical (salinisation, pollution, acidification) or biological (reduction in biomass or biodiversity) factors, all of which are mainly linked to human activities: agriculture, deforestation, industrial pollution, etc.

BONUS SET



LAND DEGRADATION





Soil is considered degraded when it has lost some of its functions, such as feeding plants or animals, filtering water or hosting biodiversity. Soil degradation is due to various physical (erosion, compaction, excess or lack of water), chemical (salinisation, pollution, acidification) or biological (reduction in biomass or biodiversity) factors, all of which are mainly linked to human activities: agriculture, deforestation, industrial pollution, etc.

BONUS SET