

7 Global warming and climate change

As the Earth's surface warms by day and cools by night, some of the heat is trapped in the atmosphere by greenhouse gases, keeping the Earth warm (average 14 °C). However, human activity is changing the Earth's natural greenhouse effect. Burning **fossil fuels** adds **carbon dioxide** to the atmosphere, causing more warming. The consequences aren't just temperature increases, but also changes to the Earth's **ecosystems**¹.

Climate change refers to the global variation of the Earth's climate patterns. It's causing significant and long-lasting changes to the climate, including temperature, humidity, atmospheric pressure, wind and rainfall. Some of the consequences of climate change are:

- rising sea levels as ice at the poles and in glaciers melts.
- increased frequency of extreme weather events, such as intense heatwaves, prolonged **droughts**², torrential rains and hurricanes. In some areas of the planet, access to fresh water can lead to political tension between regions and countries.
- an increase in the temperature of seas and oceans, which results in a loss of biodiversity and can reduce their capacity to capture CO₂, further intensifying the effects of climate change.
- fewer areas of the planet covered with snow and ice.
- changes in precipitation patterns. Drought is affecting more and more territories and at the same time, more frequent floods occur in wetlands.
- transformation of ecosystems due to the halting of migration of certain species or the massive **displacement**³ of others.
- ocean acidification caused by increased levels of CO₂.

¹**ecosystem:** biological community of interacting organisms and their physical environment.

²**drought:** long period of time when there is little or no rain.

³**displacement:** forcing someone or something away from their home.

Sustainable Development Goals



On September 25, 2015, 193 countries, including Spain, committed to meeting the 17 United Nations Sustainable Development Goals (SDGs) by 2030. The SDGs cover three fields of action: environmental, social and economic.

CLIL activities

- 20 In your notebook, explain what climate change means. How is it different to global warming?
- 21 Listen to Goals 7 and 13 of the SDGs. What do they refer to? Is there anything you can do to help reach these goals?
- 22 **TASK STEAM** Create a list of ten energy-saving measures to apply in your school. Compare your list with a classmate and then compile a final list of the ten best measures. Make a presentation to the class.