

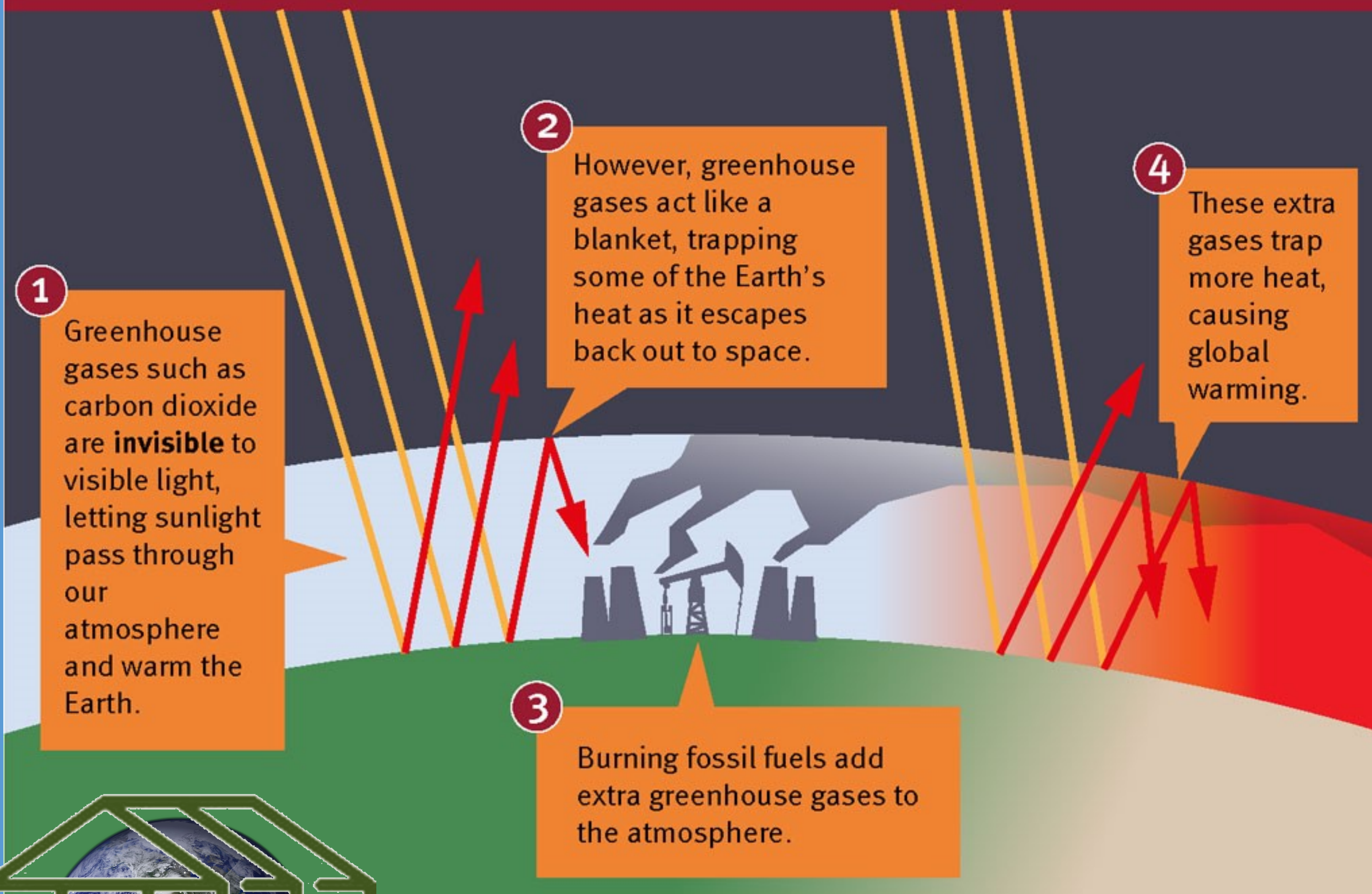


**ADAPTING  
THE LEVELS**

# Climate Jargon Explained

In today's world it's hard to avoid jargon, especially when it comes to climate change. A few words which are often bandied about but rarely explained are:

## THE GREENHOUSE EFFECT



The Greenhouse Effect:

The greenhouse effect is when gases in the earth's atmosphere trap the Sun's heat, the same way glass in a greenhouse does.

This makes our planet much warmer than it would be if it didn't have an atmosphere, and is one of the things which makes it a comfortable place to live.

Human activities are changing the earth's natural greenhouse effect. Burning fossil fuels like coal and oil puts more carbon dioxide into our atmosphere. The more greenhouse gases there are in the atmosphere, the more heat gets trapped, warming the planet and changing the climate.

The main greenhouse gasses are water vapour (H<sup>2</sup>O), carbon dioxide (CO<sup>2</sup>), methane (CH<sup>4</sup>), nitrous oxide (N<sup>2</sup>O), and ozone (O<sup>3</sup>).



Climate Lag:

There is a 40-year delay between the release of emissions and the increase in global temperatures, which is known as climate lag.

The planet takes several decades to respond to increased CO<sup>2</sup> because of the thermal inertia of the oceans.

Consider a saucepan of water placed on a gas stove. Although the flame has a temperature that might be as high as 1,900°C, the water takes a few minutes to boil. The same delayed response is seen when the sun's energy, trapped by greenhouse gasses, warms the earth's oceans. This process takes decades.

Putting an exact number on this climate lag can be difficult because the ocean currents mix the warm upper layers with the cooler deeper waters. However, it's widely agreed that 60% of warming from climate change takes between 25 and 50 years. The mid-point of this is 37.5 years, which is often rounded up to 40 years.







## Climate Change Mitigation:

Mitigation is about how to reduce the severity of climate change. Since the industrial revolution, we have been emitting more and more greenhouse gasses. Any action which reduces our emissions or absorbs the carbon dioxide already in the atmosphere is a form of mitigation. So, planting trees (in the right place) is one way of working with nature to reduce the levels of carbon dioxide in the atmosphere, as trees absorb the gas as part of their life cycle.

## Net Zero Carbon:

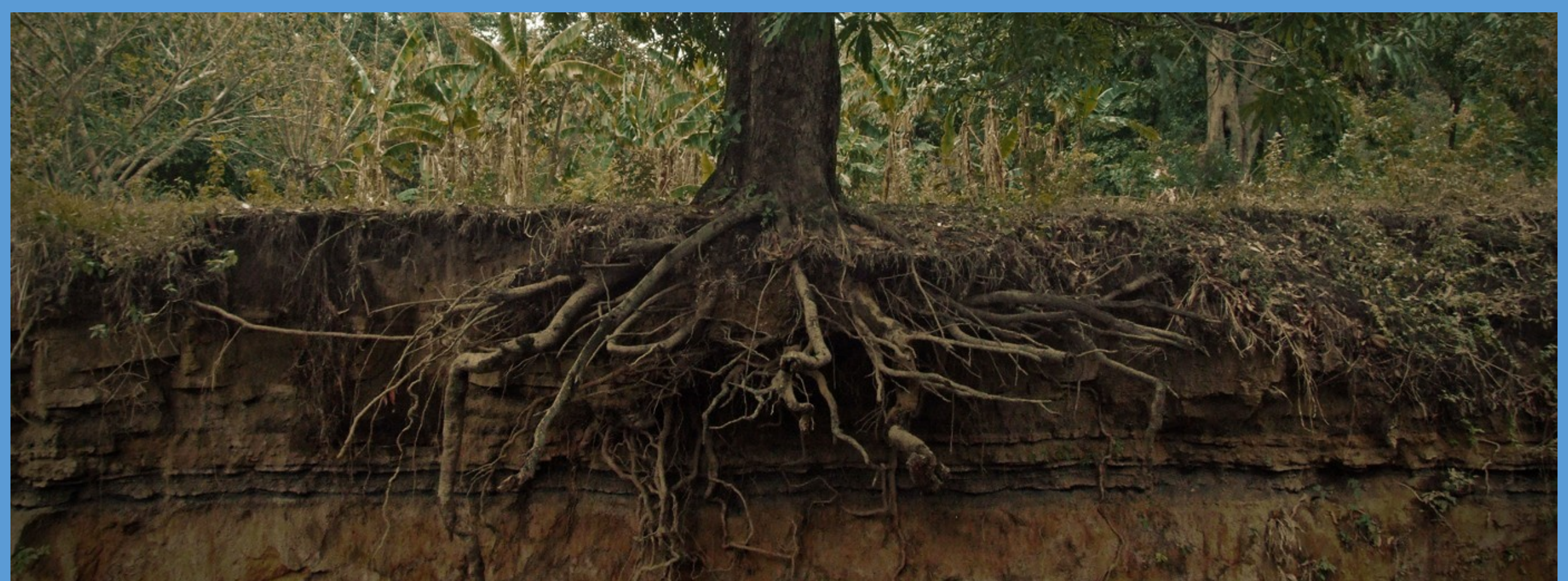
Net-zero means that while some carbon dioxide (CO<sup>2</sup>) will still be produced, it will be cancelled out in other ways, such as by planting trees or storing it underground. This will prevent further climate change.

## Climate Change Adaptation:

Adaptation is all about changing and planning for change.

Adaptation encourages everyone to think about our likely climate future and plan so we are not caught out when, for example, the rate of sea level rise increases or more droughts or storms occur.

One example is trees in the right location, which can play an important role in climate adaptation by stabilising the soil structure, meaning less soil is washed away in rainstorms. When soil is washed away it reduces the ability of a field to produce food, store carbon, and support biodiversity. The eroded soil can also increase flood risk downstream.



## Climate Resilience:

Resilience is the ability to 'bounce back' or recover from an event like a storm or an extreme high tide.

An example of this is sowing traditional grass seed mixes on grazing land that is vulnerable to flooding. These tend to recover from flooding better than modern strains that have been bred for productivity.

## Taking Action on Climate Mitigation, Adaptation & Resilience:

When considering what action we should take on climate change it is important to consider all three: mitigation, adaptation and resilience. Many solutions have multiple benefits, as shown by the example of trees above.

