Media Workshop
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INTERGOVERNMENTAL PANEL ON climate change
WMO UNEP

Climate Change is a Large Issue

Majority of the sciences and engineering disciplines are involved.

Social sciences are interested.

Business/Industry has a stake.

Involves citizens, politicians, public policy experts, and advocates.

Every sector of the economy affected.

All aspects of our lives touched: environment, jobs, health, politics, national security, arts, religion, etc.

If the world had no atmosphere, it would be very cold

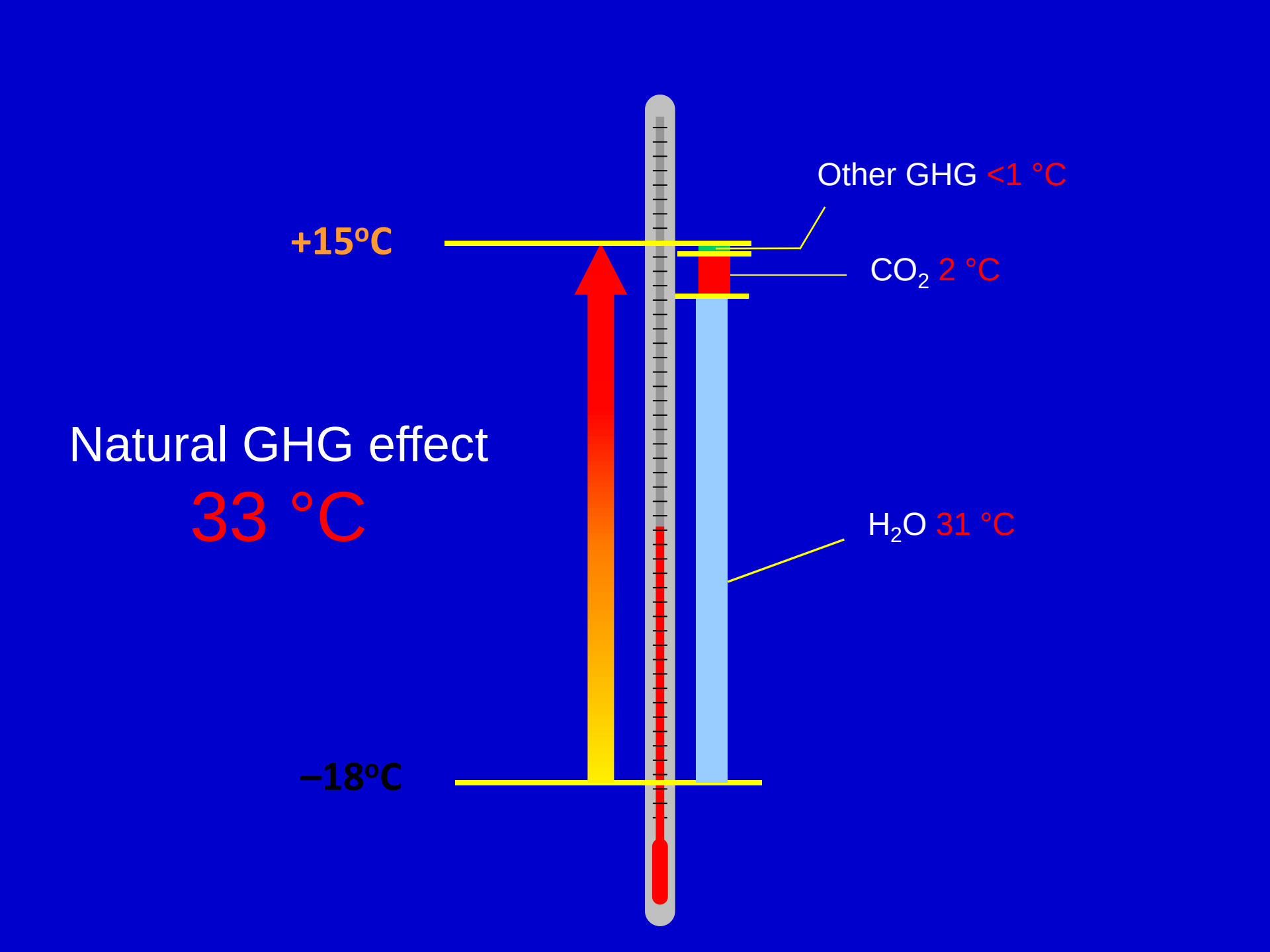
–18°C

+15°C

+ 33°C

Earth without air

Our planet


Other GHG <1 °C
+15°C
CO2 2 °C
Natural GHG effect
33 °C
H2O 31 °C
–18°C

BUT THE COMPOSITION OF AIR IS CHANGING RAPIDLY due to human activities:

→ more GHG (CO_2, CH_4, NO_x...)
→ more aerosol (air pollution)

Sources of emissions

Energy production remains the primary driver of GHG emissions

2010 GHG emissions

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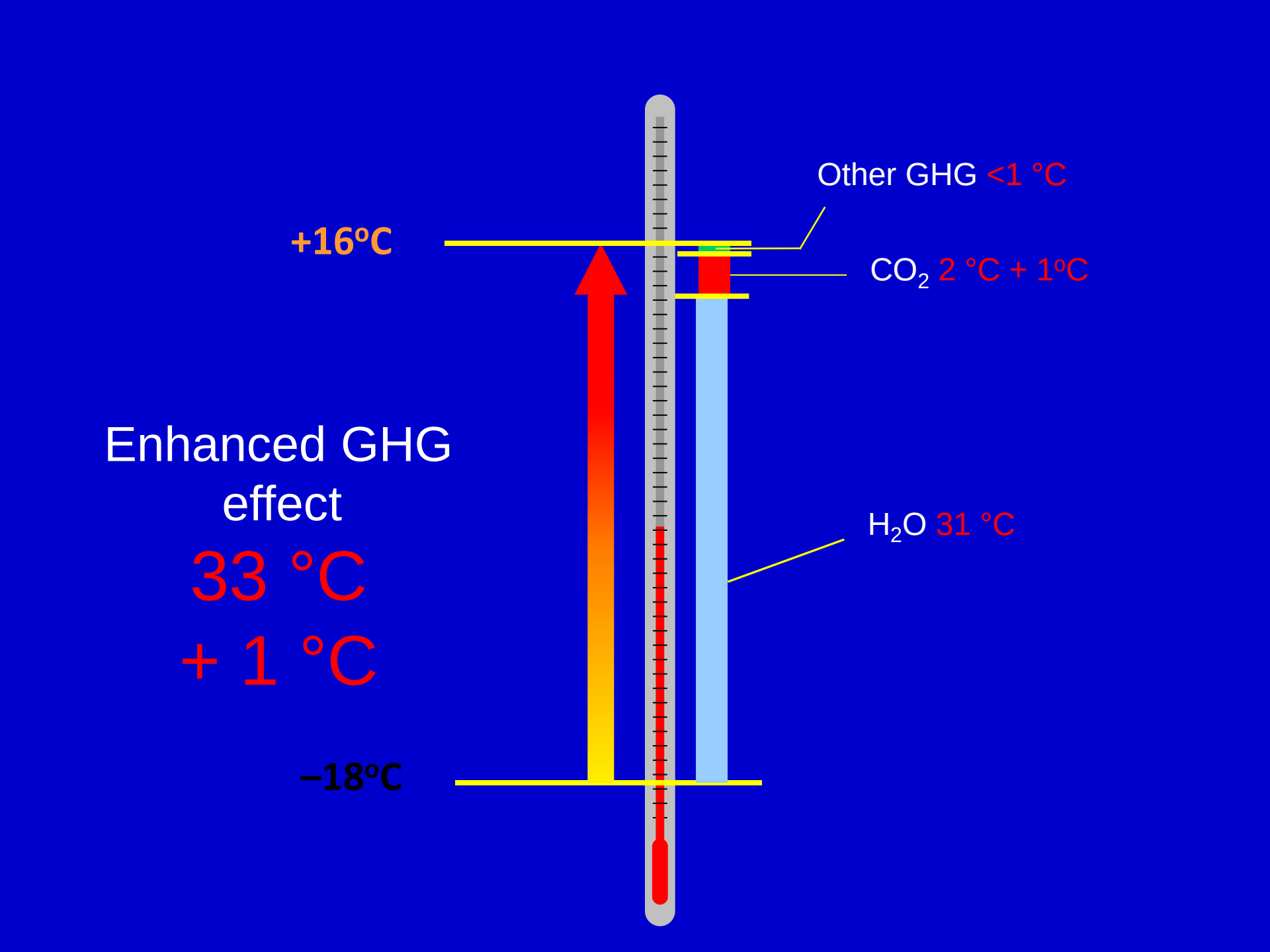
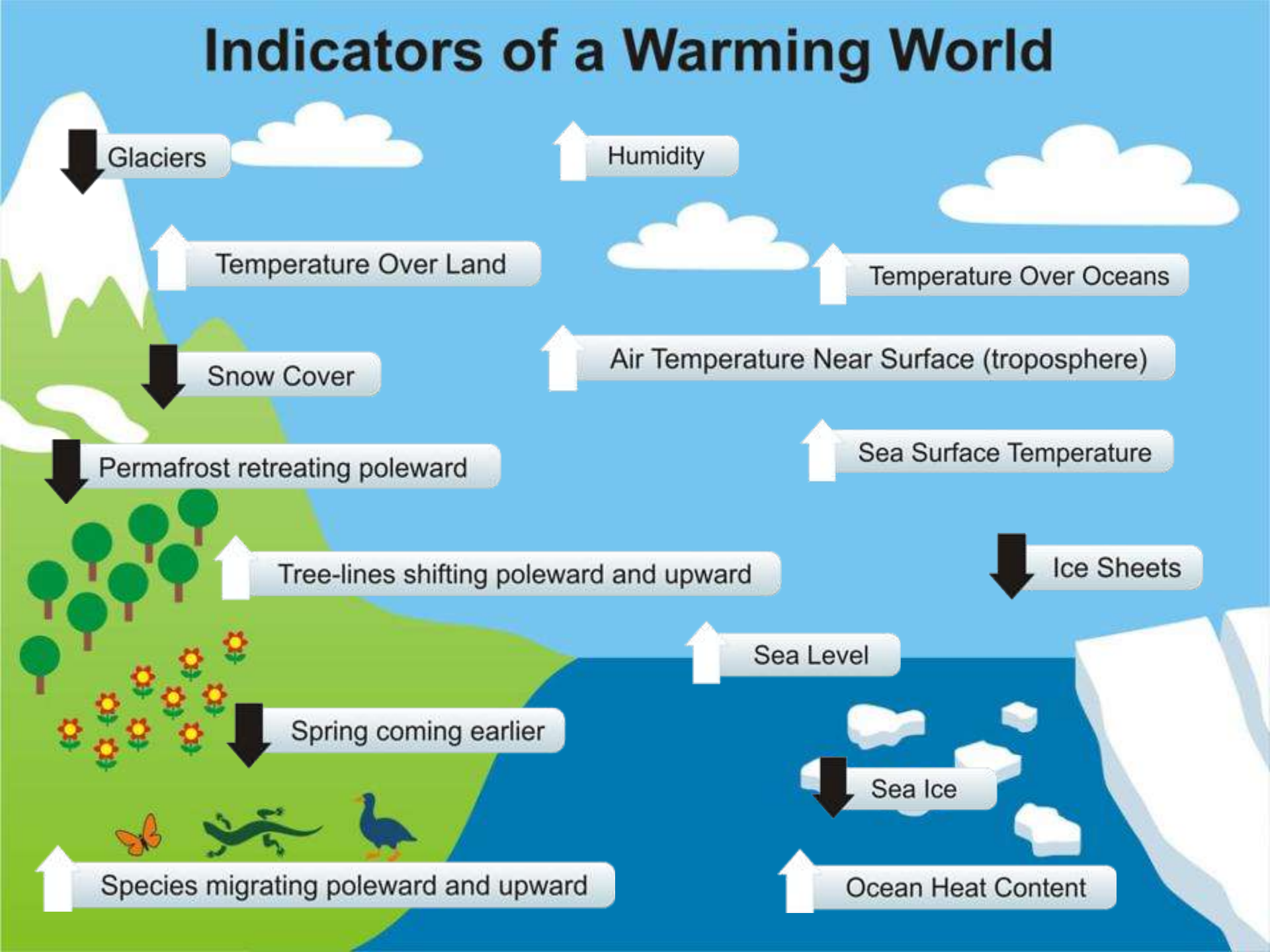
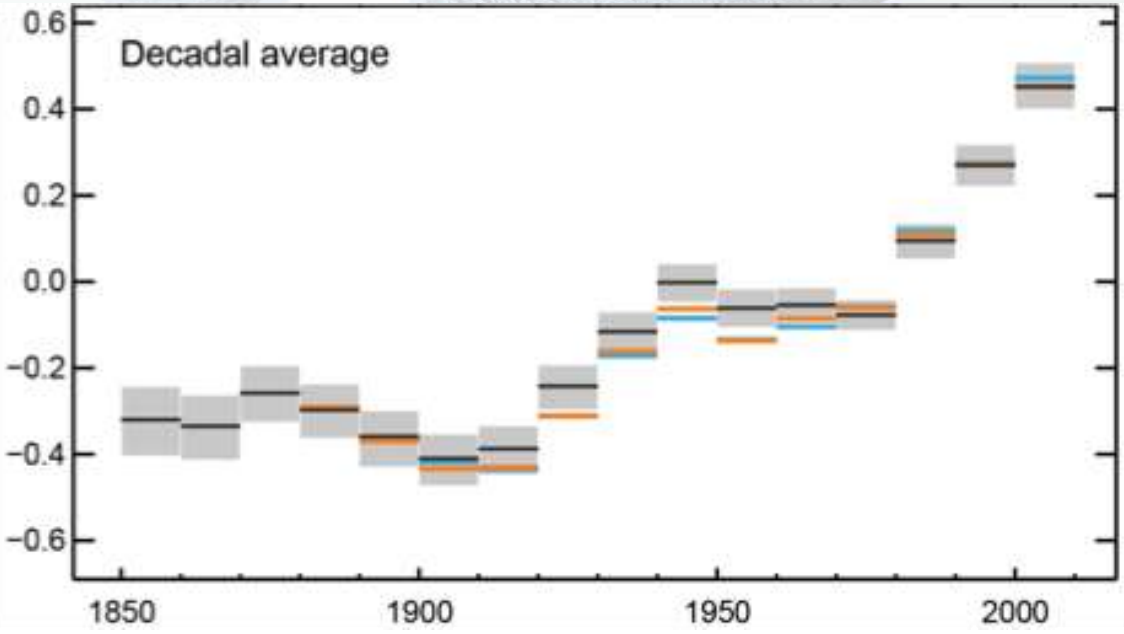

Other GHG <1 °C
+16°C
CO2 2 °C + 1°C
Enhanced GHG effect
33 °C
+ 1 °C
H2O 31 °C
–18°C

Indicators of a Warming World



Humans are changing the climate

It is extremely likely that we are the dominant cause of warming since the mid-20th century



Globally averaged combined land and ocean surface temperatures

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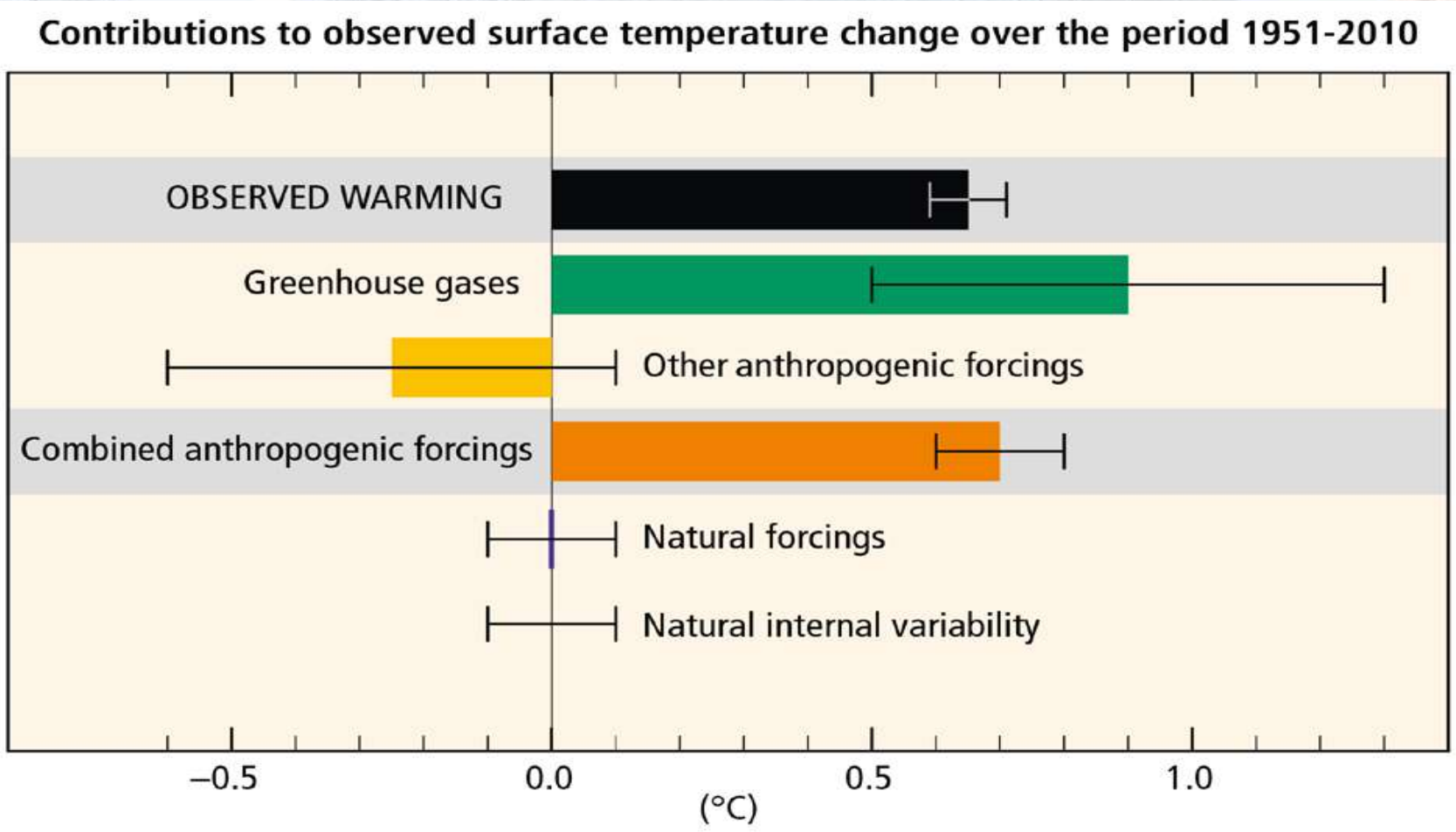
Antropogenic forcings are *extremely likely* the cause of warming



Impacts are already underway

- Tropics to the poles
- On all continents and in the ocean
- Affecting rich and poor countries (but the poor are more vulnerable everywhere)




HUMAN INFLUENCE: Some changes in extreme weather and climate events observed since ~1950 are linked to human activity

In a number of regions, impacts are already underway:

- decrease in cold temperature extremes
- increase in warm temperature extremes
- increase in extreme high sea levels
- increase in the number of heavy precipitation events

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Projected climate changes

Continued emissions of greenhouse gases will cause further warming and changes in the climate system

Oceans will continue to warm during the 21st century

Global mean sea level will continue to rise during the 21st century

It is very likely that the Arctic sea ice cover will continue to shrink and thin as global mean surface temperature rises

Global glacier volume will further decrease

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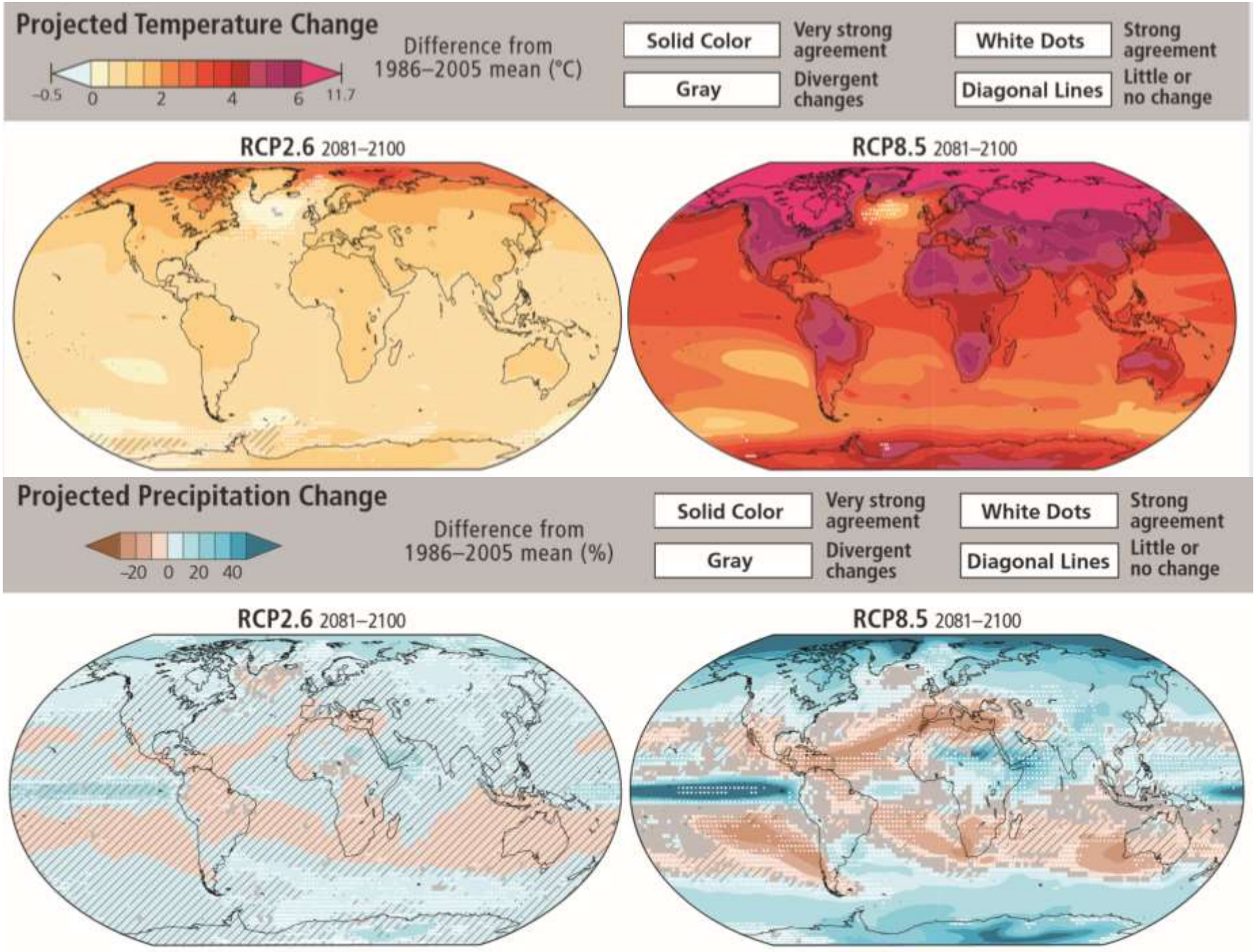
Projected Temperature Change
−0.5
0
2
4
6
11.7
Difference from 1986–2005 mean (°C)
Solid Color
Very strong agreement
White Dots
Strong agreement
Gray
Divergent changes
Diagonal Lines
Little or no change
RCP2.6 2081–2100
RCP8.5 2081–2100
Projected Precipitation Change
−20
0
20
40
Difference from 1986–2005 mean (%)
Solid Color
Very strong agreement
White Dots
Strong agreement
Gray
Divergent changes
Diagonal Lines
Little or no change
RCP2.6 2081–2100
RCP8.5 2081–2100

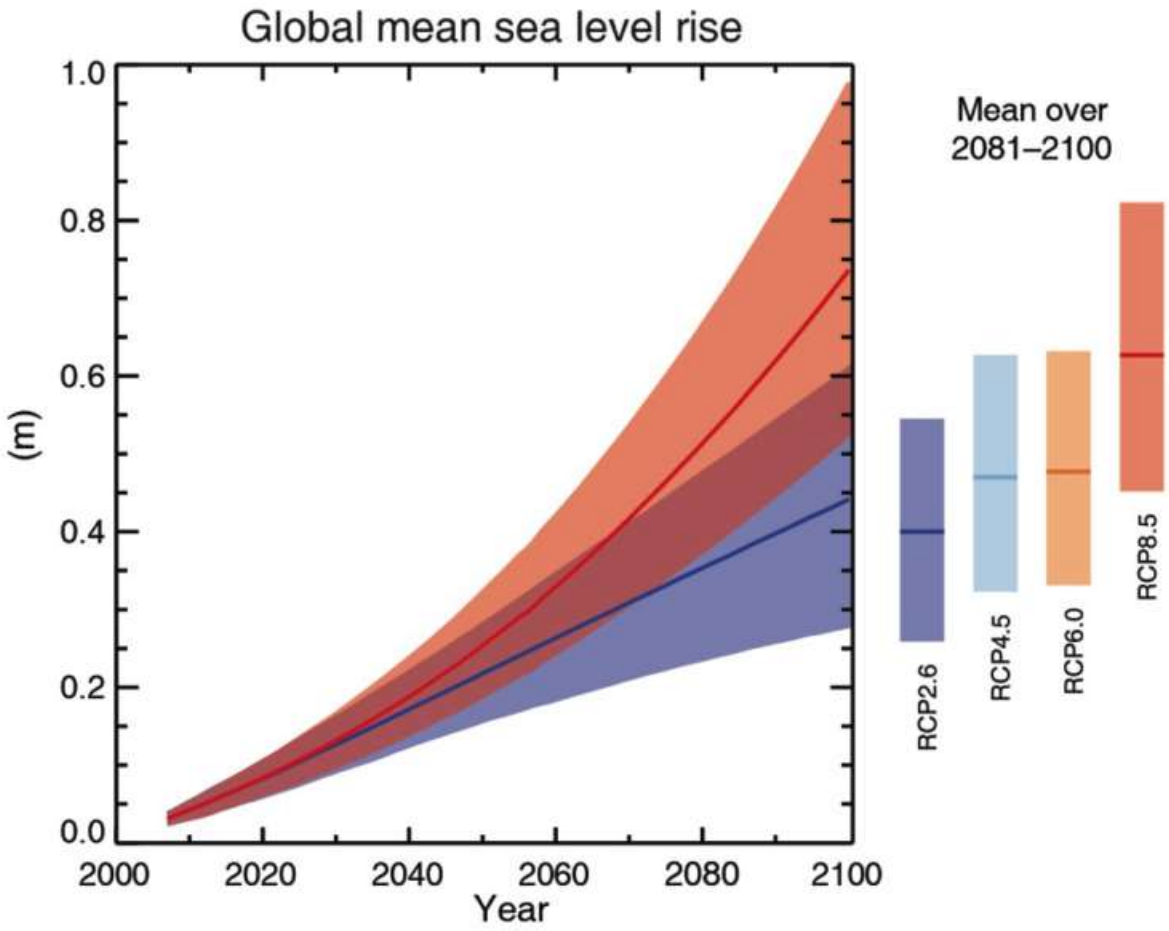

Fig. SPM.9

RCP2.6 (2081-2100), *likely* range: 26 to 55 cm

RCP8.5 (2081-2100), *likely* range: 45 to 82 cm

Global temperature rise

+2°

PROBLEMATIC

- 1 - 2 billion additional people with water stress
- Impacts on cereal productivity at low latitudes
- Increased coastal flooding and storms
- Greater depth of seasonal permafrost thaw

+4°

DISASTROUS

- A 16 ºC increase in the Arctic
- 1.1 - 3.2 billion additional people with water stress
- Widespread coral mortality; risk of major extinctions around the globe
- Substantial global impact on major crops
- Long-term prospect of sea level rise

Potential Impacts of Climate Change

Food and water shortages

Increased displacement of people

Increased poverty

Coastal flooding

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Facing the dangers from climate change…

…there are only three options:

Mitigation, meaning measures to reduce the pace & magnitude of the changes in global climate being caused by human activities.

Adaptation, meaning measures to reduce the adverse impacts on human well-being resulting from the changes in climate that do occur.

Suffering the adverse impacts that are not avoided by either mitigation or adaptation.

Limiting Temperature Increase to 2˚C

Measures exist to achieve the substantial emissions reductions required to limit likely warming to 2˚ C (40-70% reduction in GHGs globally by 2050 and near zero GHGs in 2100)

A combination of adaptation and substantial, sustained reductions in greenhouse gas emissions can limit climate change risks

Implementing reductions in greenhouse gas emissions poses substantial technological, economic, social, and institutional challenges

But delaying mitigation will substantially increase the challenges associated with limiting warming to 2˚ C

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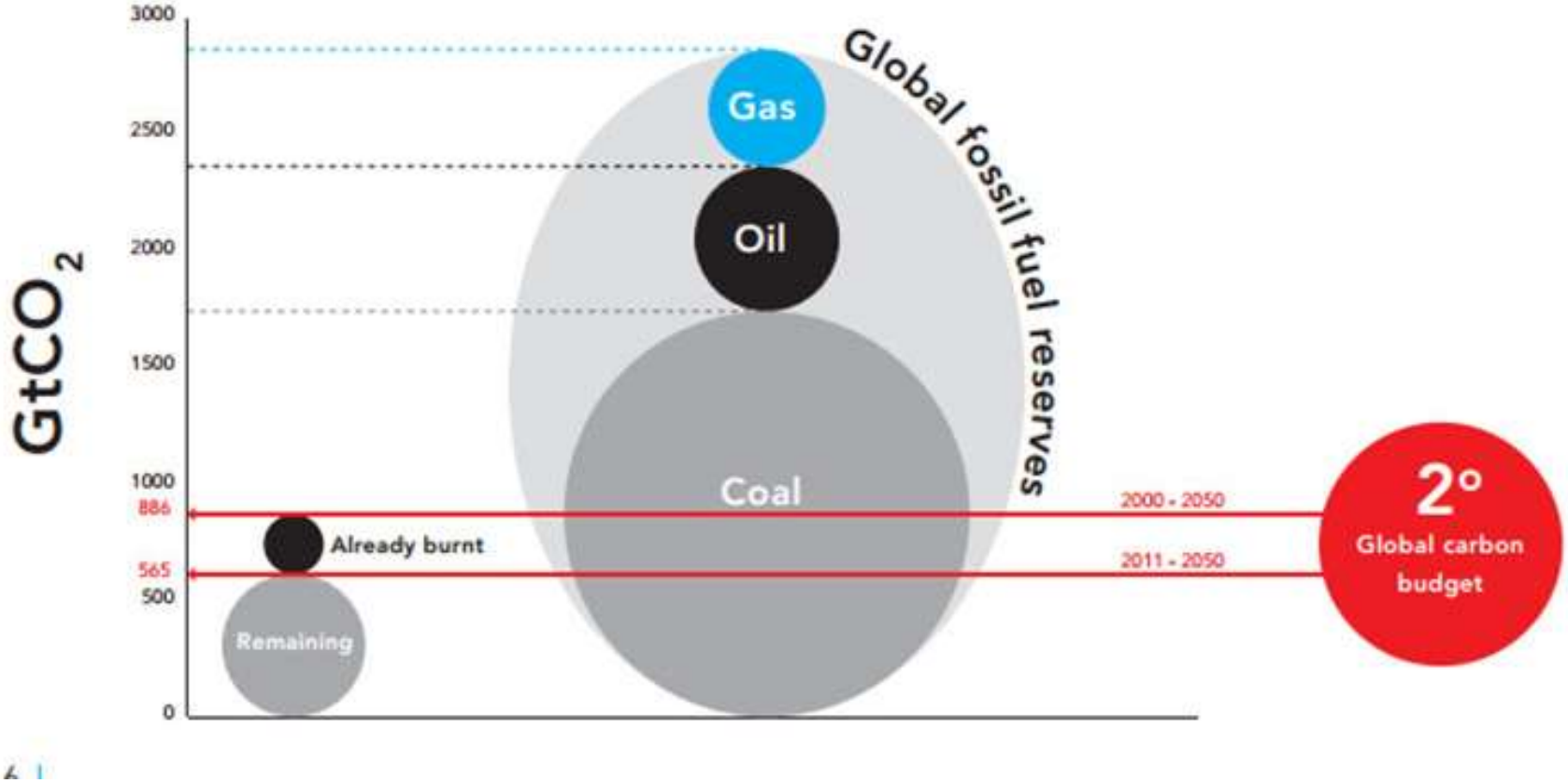
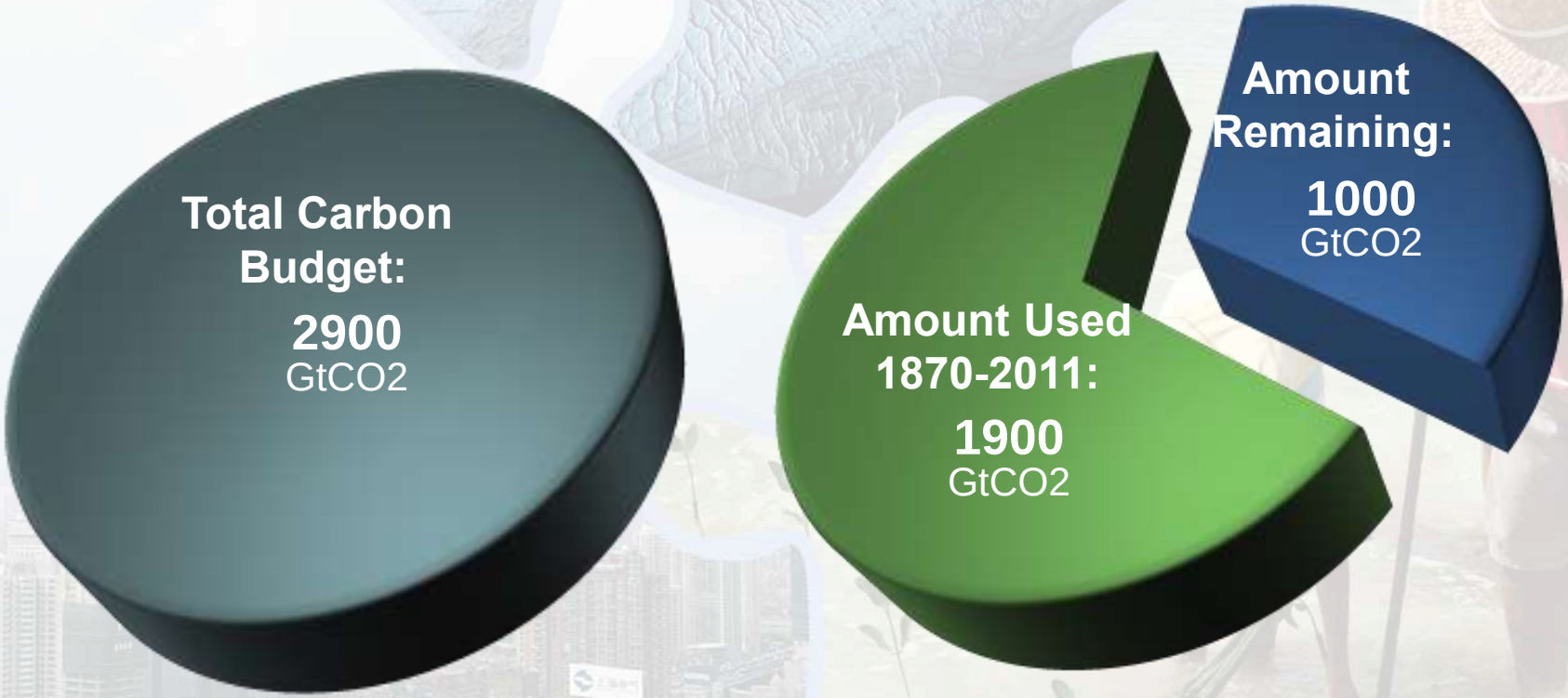
Comparison of the global 2ºC carbon budget with fossil fuel resertves CO_2 emissions potential



The window for action is rapidly closing

65% of our carbon budget compatible with a 2° C goal already used



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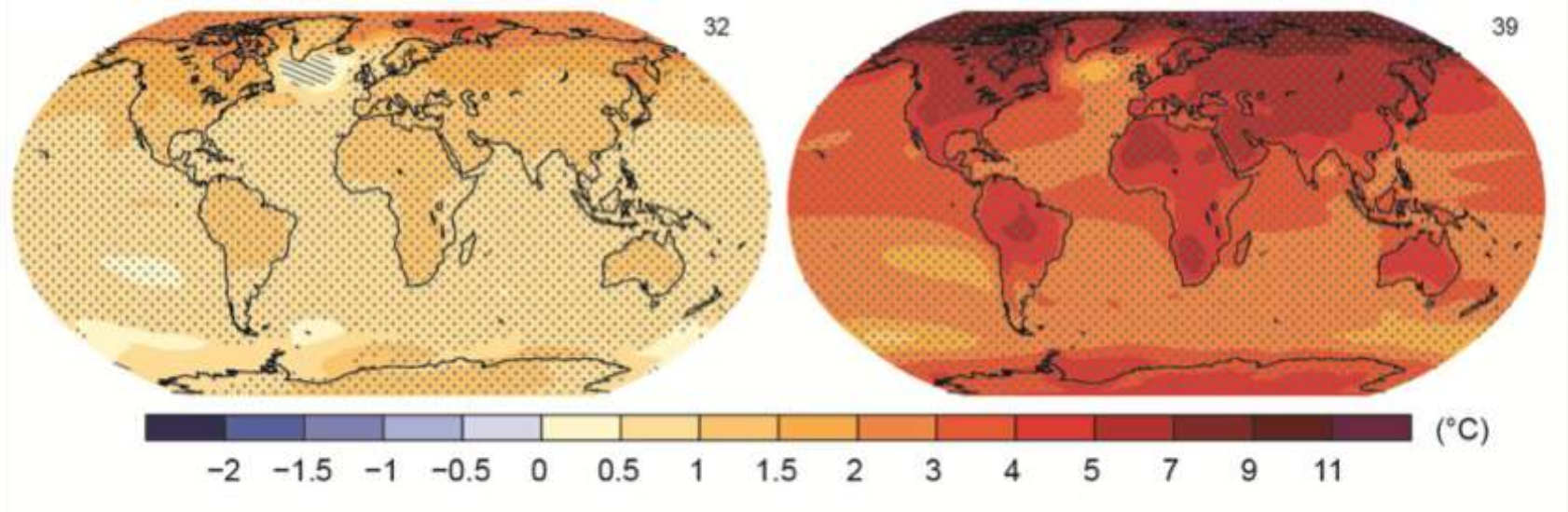
The Choices We Make Will Create Different Outcomes

With substantial mitigation

Without additional mitigation



Change in average surface temperature (1986–2005 to 2081–2100)

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Key Messages

- ➜ **Human influence on the climate system is clear**
- ➜ **The more we disrupt our climate, the more we risk severe, pervasive and irreversible impacts**
- ➜ **We have the means to limit climate change and build a more prosperous, sustainable future**

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