Workshop for Media

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INTERGOVERNMENTAL PANEL ON climate change
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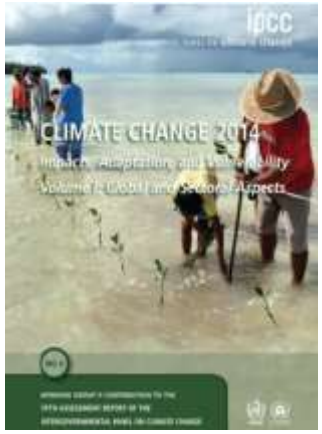
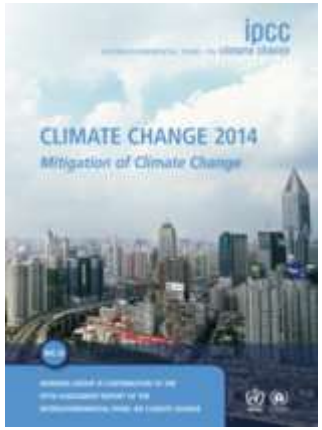
Climate Change is Broad Issue

- Majority of the sciences and engineering disciplines are involved.
- Social sciences are interested.
- Business/Industry has a stake in.
- Involves citizens, politicians, public policy experts, and advocates.
- **Every sector of the economy is affected**.
- All aspects of our lives touched: environment, jobs, health, politics, national security, arts, religion, etc.





What is happening in the climate system?

What are the risks?

What can be done?

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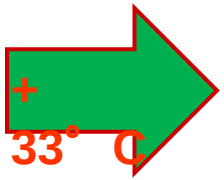
If the world had no atmosphere, it would be very cold

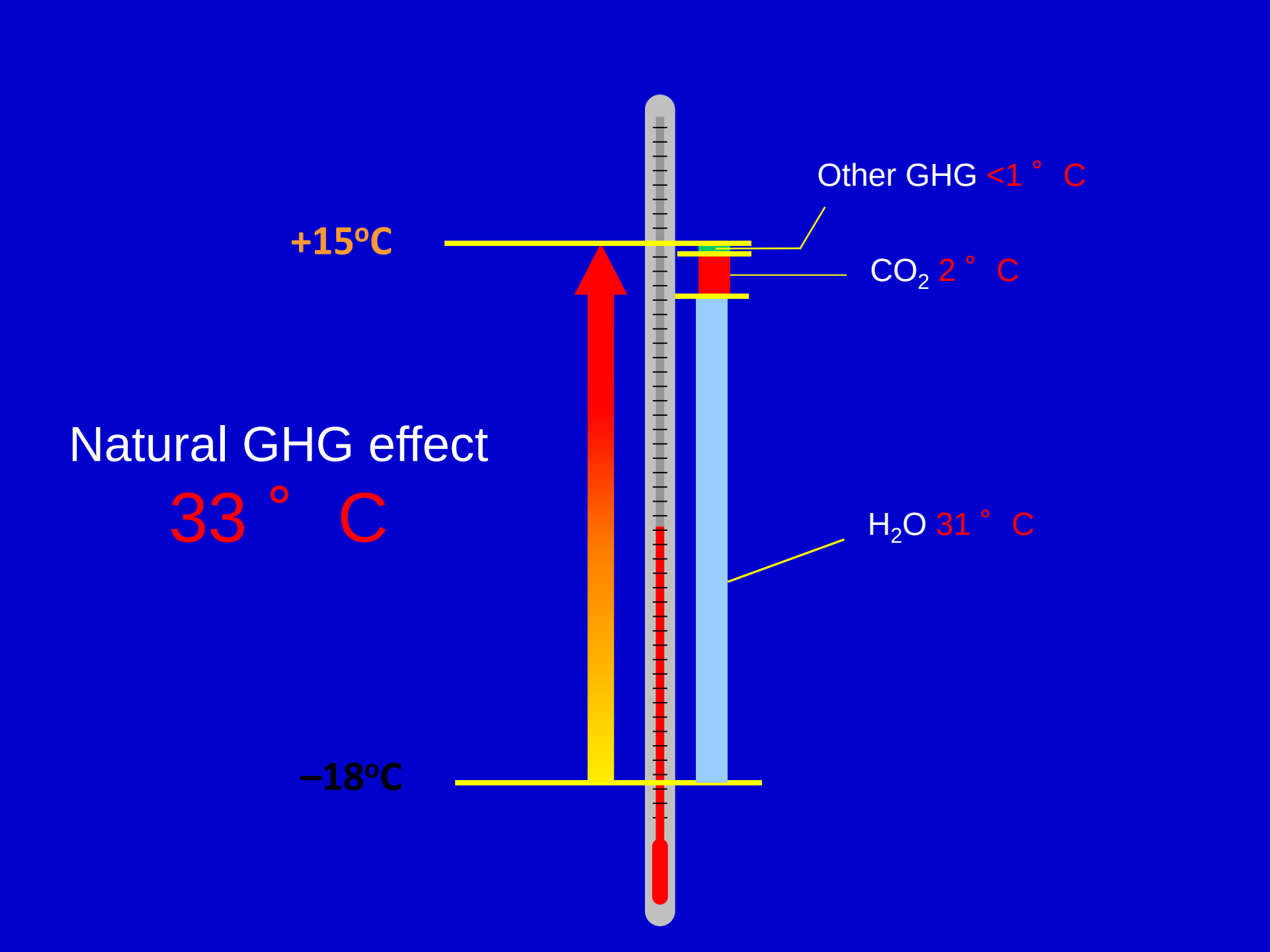
–18°C

+15°C



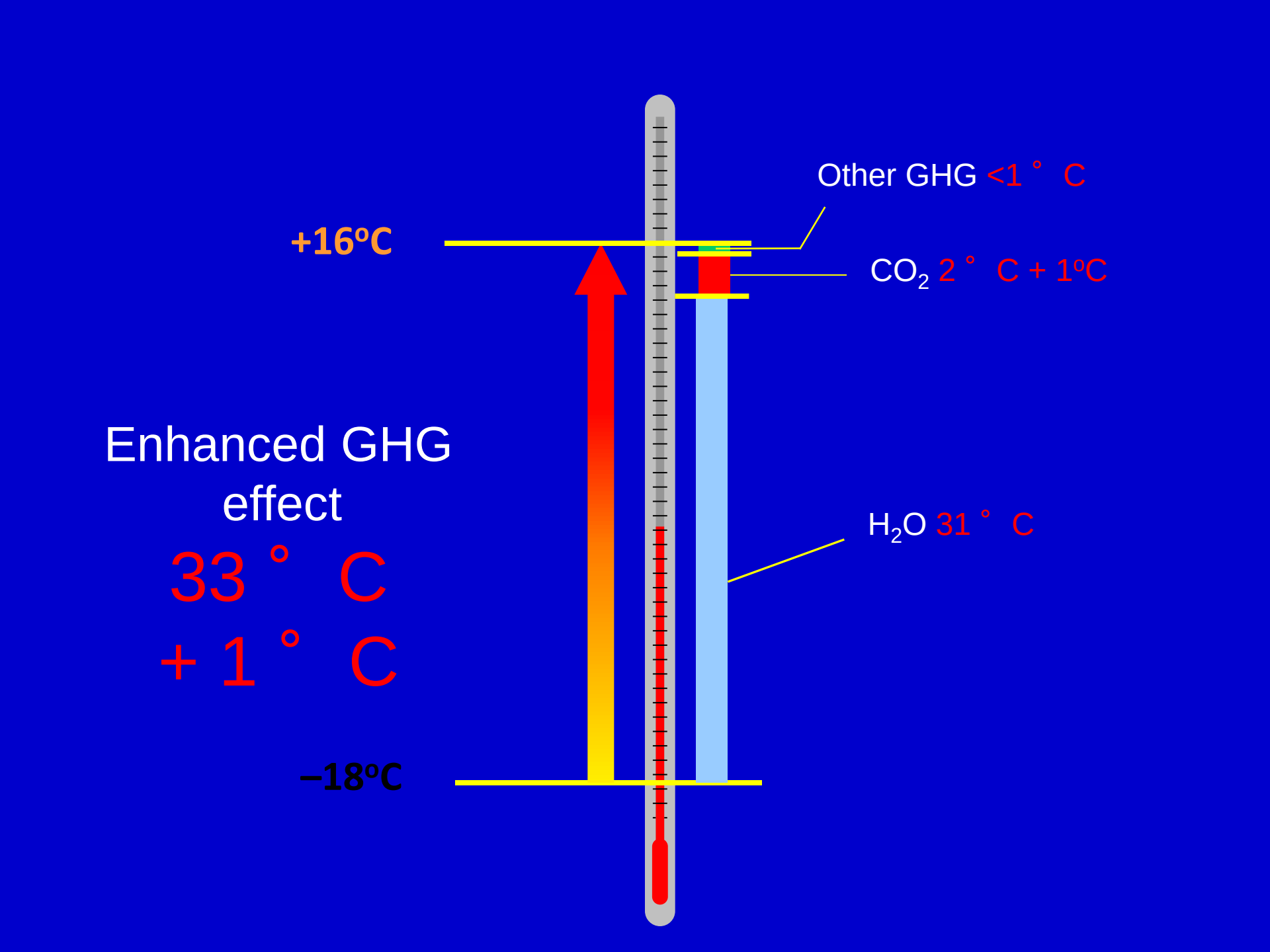
Earth without air

Our planet

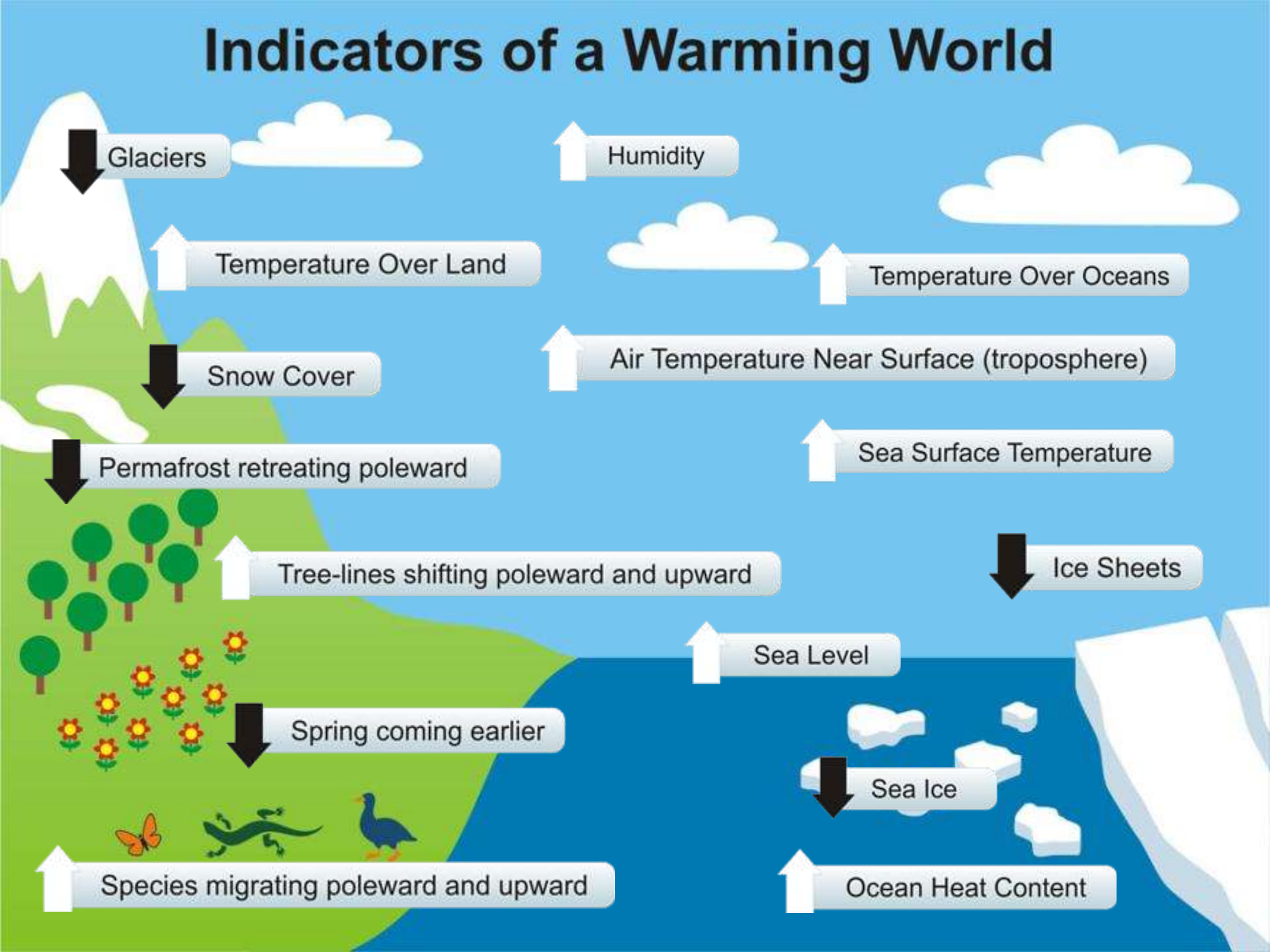

Other GHG <1 ° C
+15°C
CO2 2 ° C
Natural GHG effect
33 ° C
H2O 31 ° C
–18°C

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

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


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



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)




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

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.

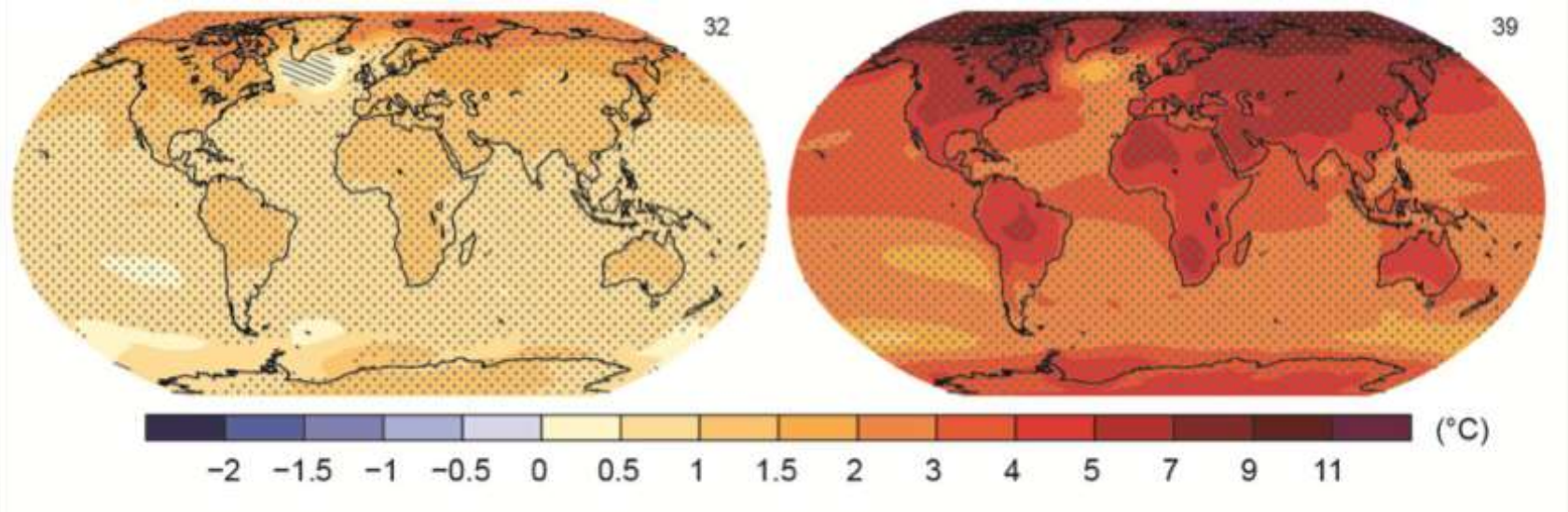
Adaptation, meaning measures to reduce the adverse impacts on human well-being resulting from the changes in climate that do occur.

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

The Choices We Make Will Create Different Outcomes

With substantial mitigation

Without additional mitigation



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

AR5 WGI SPM

Global Warming of 1.5°C

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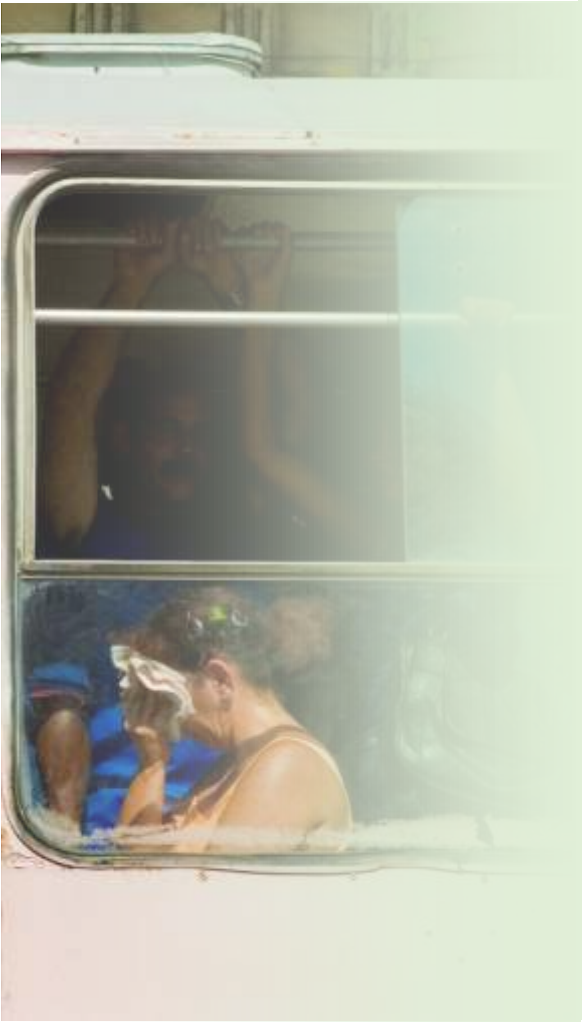
Ashley Cooper / Aurora Photos

Where are we?

Since pre-industrial times, human activities have caused approximately 1.0°C of global warming.

- Already seeing consequences for people, nature and livelihoods
- At current rate, would reach 1.5°C between 2030 and 2052
- Past emissions alone do not commit the world to 1.5°C



Impacts of global warming: Where do we want to go?

At 1.5°C compared to 2°C:

- Less impacts from extreme weather where people live
- By 2100, global mean sea level rise will be around 10 cm lower …. but will continue to rise for centuries
- 10 million fewer people exposed to risk of rising seas (…less coastal ecosystems exposed)

Jason Florio / Aurora Photos

Andre Seale / Aurora Photos

Where do we want to go?

At 1.5°C compared to 2°C:

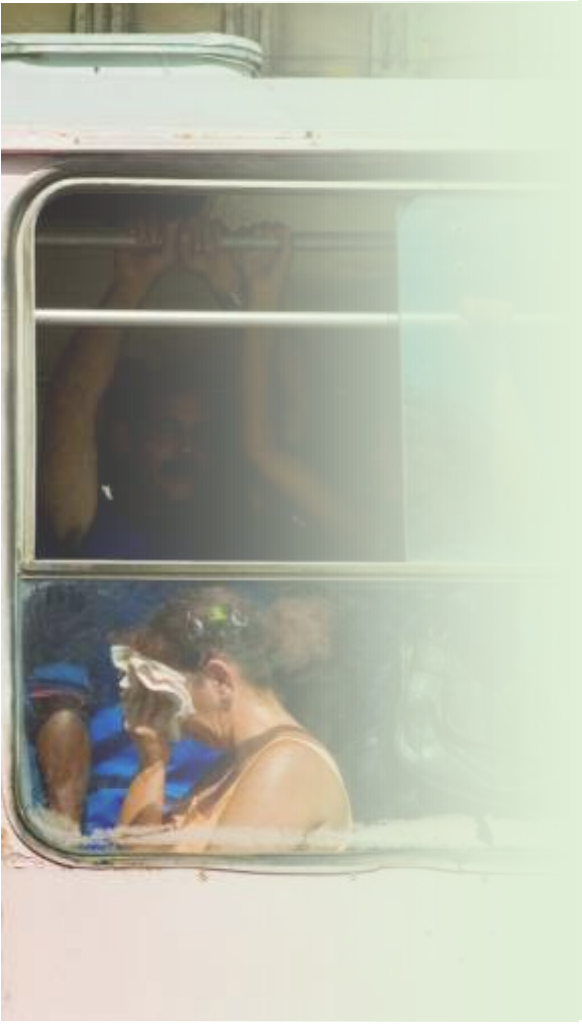
- Lower impact on biodiversity and species
- Smaller reductions in yields of maize, rice, wheat crop yields
- Global population exposed to water shortages is up to 50% less (also less water shortages for ecosystems)

Natalie Behring / Aurora Photos

Where do we want to go?

At 1.5°C compared to 2°C:

- Up to several hundred million fewer people exposed to climate-related risk and susceptible to poverty by 2050
- Lower risk to fisheries & the livelihoods that depend on them



Where do we want to go?

At 1.5°C compared to 2°C:

- Disproportionately high risk for Arctic, dryland regions, small island developing states and least developed countries
- Lower risks for health, livelihoods, food security, water supply, human security and economic growth
- A wide range of adaptation options can reduce climate risks; less adaptation needs at 1.5°C

Jason Florio / Aurora Photos

Ambitious emissions reductions have...

- Co-benefits for
- Human **health**
- **Reduced competition** for land (BECCS)
- **Food security** for humankind
- **Ecosystem restoration** and carbon storage (soils and biomass)
- **Biodiversity** conservation

Peter Essick / Aurora Photos

Robert van Waarden / Aurora Photos

System transitions consistent with 1.5°C warming

Rapid, far-reaching and unprecedented changes in all systems

- A range of technologies and behavioural changes
- Renewables supply 70-85% of electricity in 2050
- Coal declines steeply, ~zero in electricity by 2050
- Oil and especially gas persist longer – gas use rises by 2050 in some pathways
- Deep emissions cuts in transport and buildings
- Transitions in global and regional land use in all pathways, but their scale depends on the mitigation portfolio
- Urban and infrastructure system transitions imply changes in land and urban planning practices

Ashley Cooper/ Aurora Photos

Close link to Sustainable Development (SD) and SDGs

- SD balances social well-being, economic prosperity, environmental protection
- SD supports and enables the systemic transitions and transformations required
- UN Sustainable Development Goals framework
  - poverty eradication
  - reducing inequalities
  - climate action

Ashley Cooper/ Aurora Photos

There is no safe level of climate change

- Each bit of warming matters
- Each year we delay matters
- Each choice at every level matters

Ashley Cooper/ Aurora Photos

We are the answer

"Humans are at the centre of global climate change: their actions cause anthropogenic climate change, and social change is key to effectively respond to climate change."

The scientific message is clear. The response is now in the hands of society, governments and policymakers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IPCC Fifth Assessment Report

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