

The Intergovernmental Panel on Climate Change (IPCC)

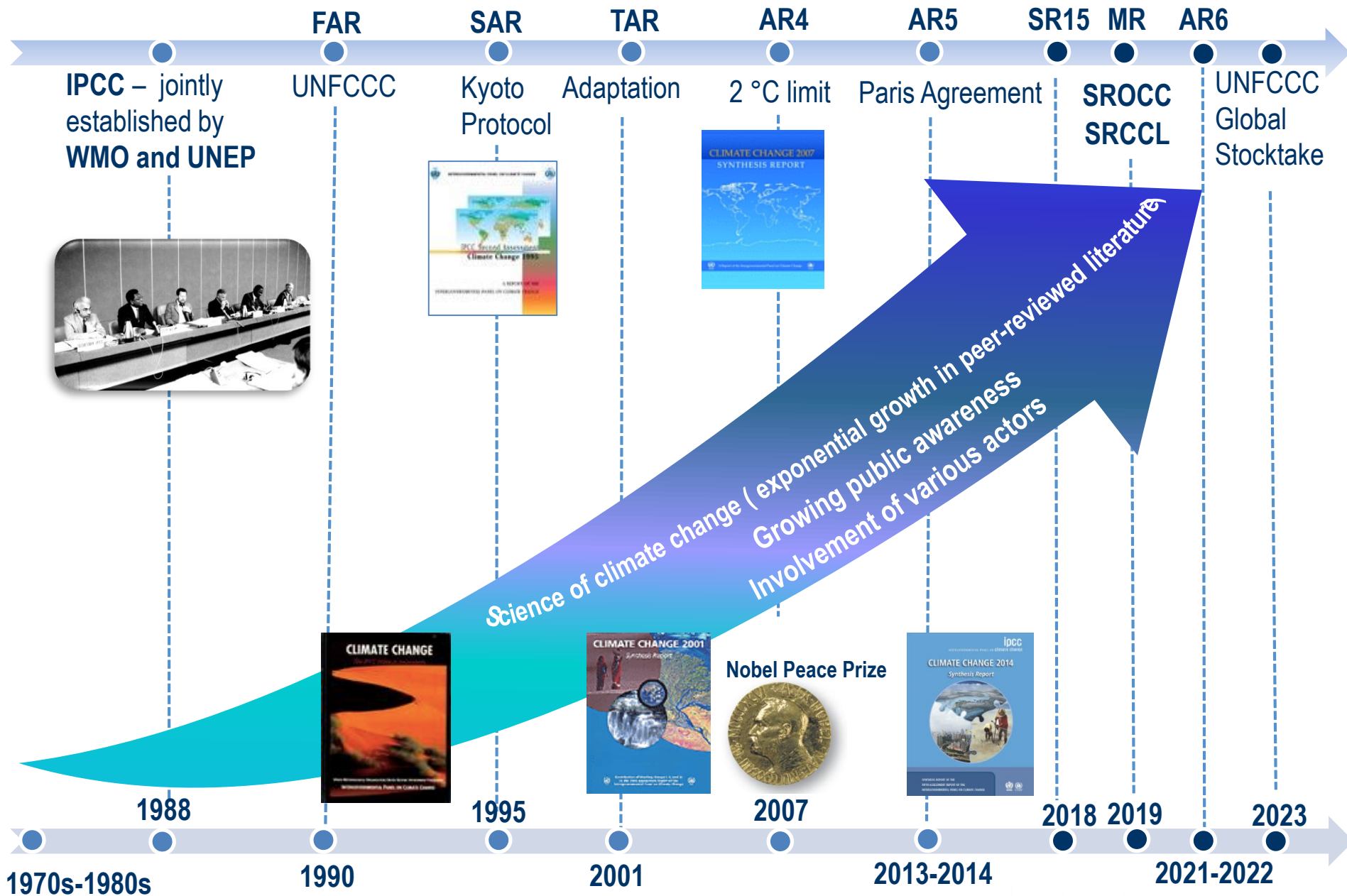
6th Assessment Cycle

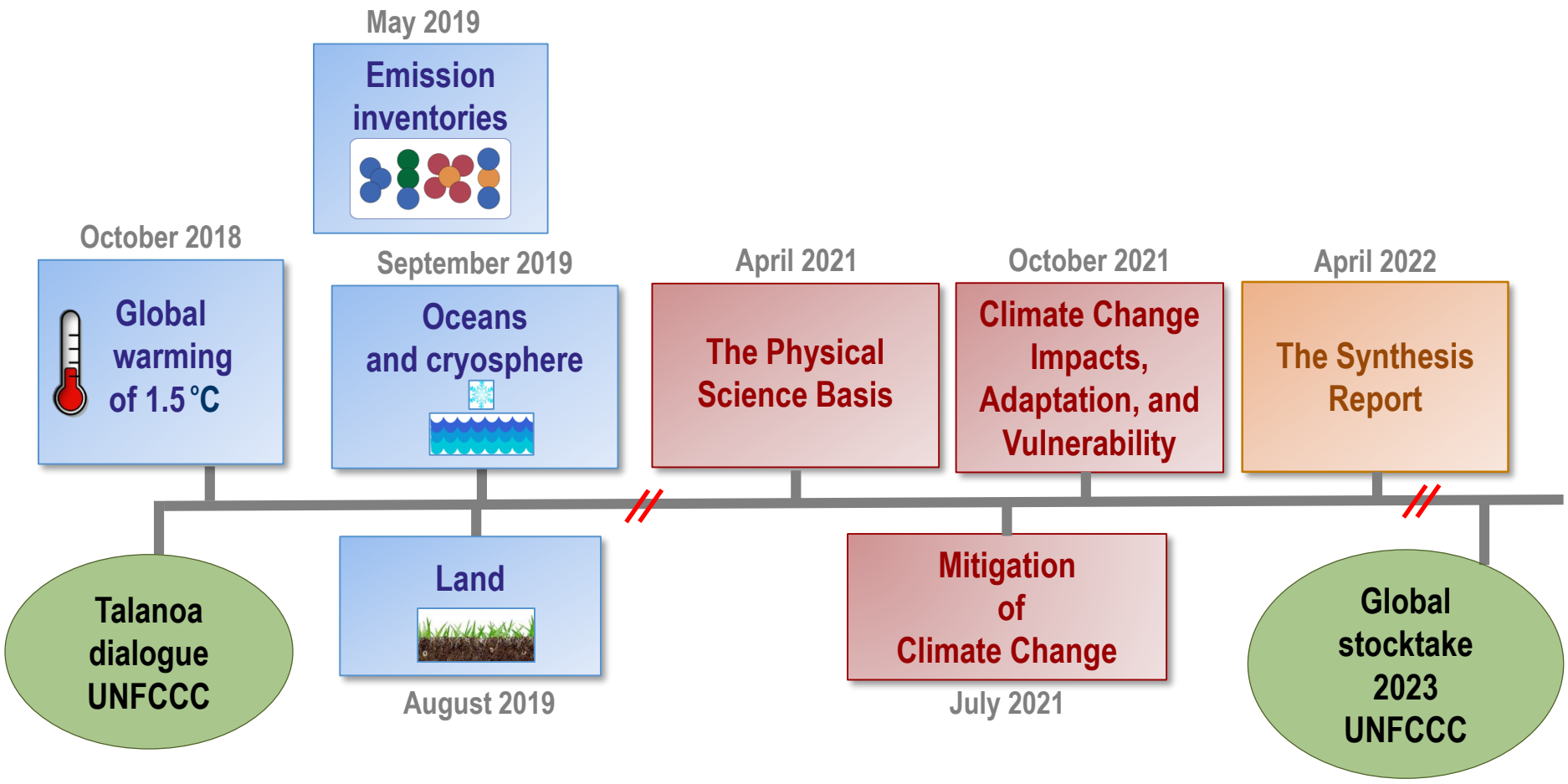
Kerstin Stendahl

Deputy Secretary, IPCC

The role of the IPCC is to **assess** on a comprehensive, objective, open and transparent basis the **scientific, technical and socio-economic information** relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation

IPCC reports should be **neutral with respect to policy**, although they may need to **deal objectively with scientific, technical and socio-economic factors** relevant to the application of particular policies





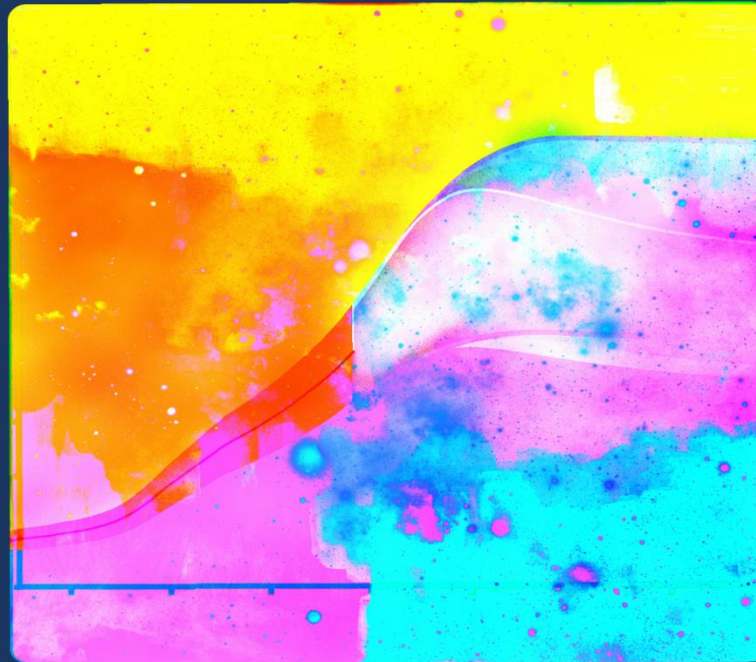


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INTERGOVERNMENTAL PANEL ON climate change

Global Warming of 1.5°C

An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty



WG I WG II WG III



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INTERGOVERNMENTAL PANEL ON climate change



Where are we now?

Since pre-industrial times, human activities have caused approximately 1°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



Ashley Cooper / Aurora Photos

Impacts of global warming 1.5°C

At 1.5°C compared to 2°C:

- Lower impact on biodiversity and species
- Smaller reductions in yields of maize, rice, wheat
- Global population exposed to increased water shortages is up to 50% less



Andre Seale / Aurora Photos

Impacts of global warming 1.5°C

At 1.5°C compared to 2°C:

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



Natalie Behring / Aurora Photos

Impacts of global warming 1.5°C

At 1.5°C compared to 2°C:

- Less extreme weather where people live, including extreme heat and rainfall
- By 2100, global mean sea level rise will be around 10 cm lower but may continue to rise for centuries
- 10 million fewer people exposed to risk of rising seas



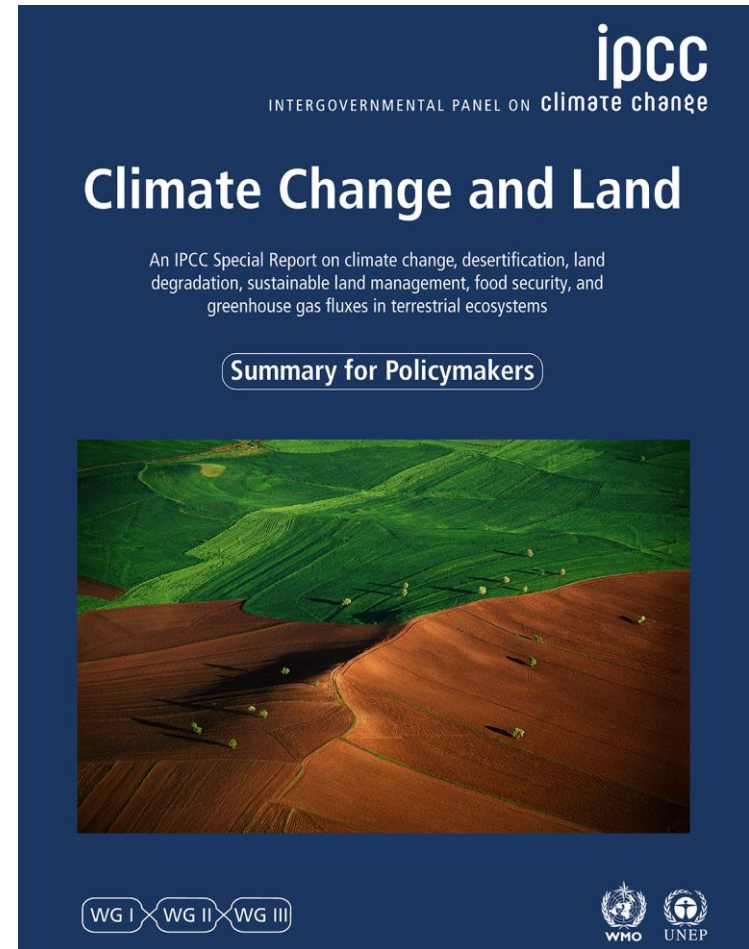
Jason Florio / Aurora Photos

CLIMATE CHANGE AND LAND

An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.

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REPORT COVER IMAGE:
Agricultural landscape between Ankara and Hattusha, Anatolia, Turkey (40°00' N – 33°35' E)
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Climate change is making
a **challenging situation**
worse and undermining
food security.



Agriculture, food production, and deforestation are major drivers of climate change.



The way we produce our **food matters**; dietary choices can help reduce emissions and pressure on land.



Better land
management also
supports
**biodiversity
conservation**



Tackling this
challenge requires a
**coordinated
response.**

The Ocean and Cryosphere in a Changing Climate

This Summary for Policymakers was formally approved at the Second Joint Session of Working Groups I and II of the IPCC and accepted by the 51th Session of the IPCC, Principality of Monaco, 24th September 2019

Summary for Policymakers



WG I WG II



WG I WG II





Changes in the mountain cryosphere

- **Smaller glaciers** found, for example, in Europe, eastern Africa, the tropical Andes and Indonesia are projected to lose **more than 80%** of their current ice mass by 2100 if emissions continue to increase strongly.
- As glaciers melt and snow cover shrinks, warm-adapted plant and animal species migrate upslope. Cold- and snow-adapted species decrease and risk eventual extinction, especially without conservation.
- The retreat of the cryosphere will continue to adversely affect recreational activities, tourism and cultural assets.



Changes in the mountain cryosphere

- Hazards for people, for example through **landslides, snow avalanches or floods** will increase as glaciers and permafrost decline.
- **Changing water availability and quality** affects households, agriculture, energy systems, and people both in the region and beyond.
- Limiting warming to 1.5°C would help people to adjust to changes in **water supplies** and **limit risks related to mountain hazards**.
- **Integrated water management and transboundary cooperation** provide opportunities to reduce the impacts of climate-related cryosphere changes on water resources.



Changes in polar regions

- The Greenland and Antarctic ice sheets are losing mass, accelerating global sea level rise. They will continue to melt, committing the planet to **long-term** global sea level rise.
- **Arctic sea ice is declining in every month of the year**, and is getting thinner.
- At global warming of 1.5°C, the Arctic Ocean will **rarely be free of sea ice** in September. At 2°C warming, this will occur **up to one year in three**.



Changes in polar regions

- Permafrost is **thawing**, with the potential of **adding more greenhouse gases to the atmosphere**.
- With global warming limited to well below 2°C, **around one quarter** of near-surface permafrost will thaw by 2100. If emissions continue to increase strongly, **around 70% near-surface permafrost could be lost**.
- People living in the Arctic, especially indigenous peoples, are already **adjusting their travel and hunting activities** to the seasonality and safety of land, ice and snow conditions. Their success in adapting depends on **funding, capacities and institutional support**.



Sea level rise and coastal extremes

- During the 20th century, the global mean sea level rose by about **15cm**.
- Sea level is currently rising **more than twice as fast** and will further **accelerate** reaching up to 1.10m in 2100 if emissions are not sharply reduced.
- Extreme sea level events which now occur rarely during high tides and intense storms will become more common.
- Many low-lying coastal cities and small islands will be exposed to risks of flooding and land loss annually by 2050, especially without strong adaptation.



Sea level rise and coastal extremes

- Various adaptation approaches are already being implemented, including:
 - protection
 - accommodation
 - ecosystem-based adaptation
 - coastal advance
 - managed relocation
- People with the highest exposure and vulnerability are often those with the lowest capacity to respond.



Changes in the ocean

- To date, the ocean has taken up **more than 90%** of the excess heat in the climate system. By 2100, the ocean will take up **2 to 4 times** more heat if global warming is limited to 2°C and **up to 5 to 7 times** at higher emissions.
- Ocean warming reduces mixing between water layers and therefore the supply of **oxygen and nutrients for marine life**.
- **Marine heatwaves** are becoming more frequent and severe, especially harming warm-water corals, kelp forests and the distribution of marine life.
- The ocean takes up human-induced carbon emissions. This increases ocean acidity. It has taken up 20 to 30% of these emissions and continued uptake will exacerbate this.



Changes in marine life

- Changes in the ocean cause **shifts in fish populations**. This has reduced the global catch potential. In the future some regions will see further decreases but there will be increases in others.
- Communities that depend highly on seafood may face **risks to nutritional health and food security**.
- Reducing other pressures such as **pollution** will further help marine life deal with changes in their environment.
- Policy frameworks for **fisheries management** and **marine protected areas** offer opportunities for people to adapt.

The more decisively and earlier we act, the more able we will be to address unavoidable changes, manage risks, improve our lives and achieve sustainability for ecosystems and people around the world – today and in the future.