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WMO-No. 1342

State of the Global Climate 2025

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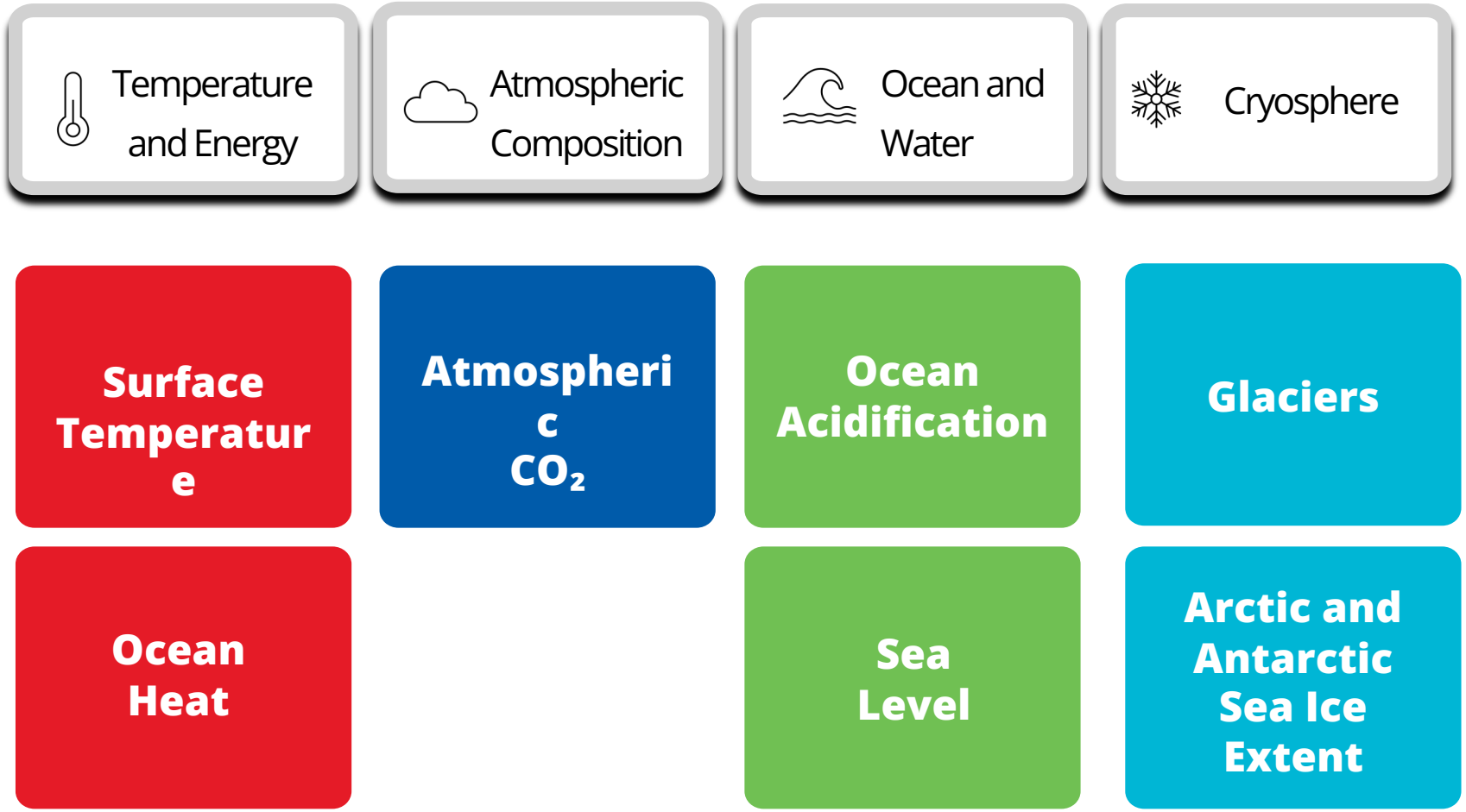
Key climate indicators monitor long term changes to the global climate system



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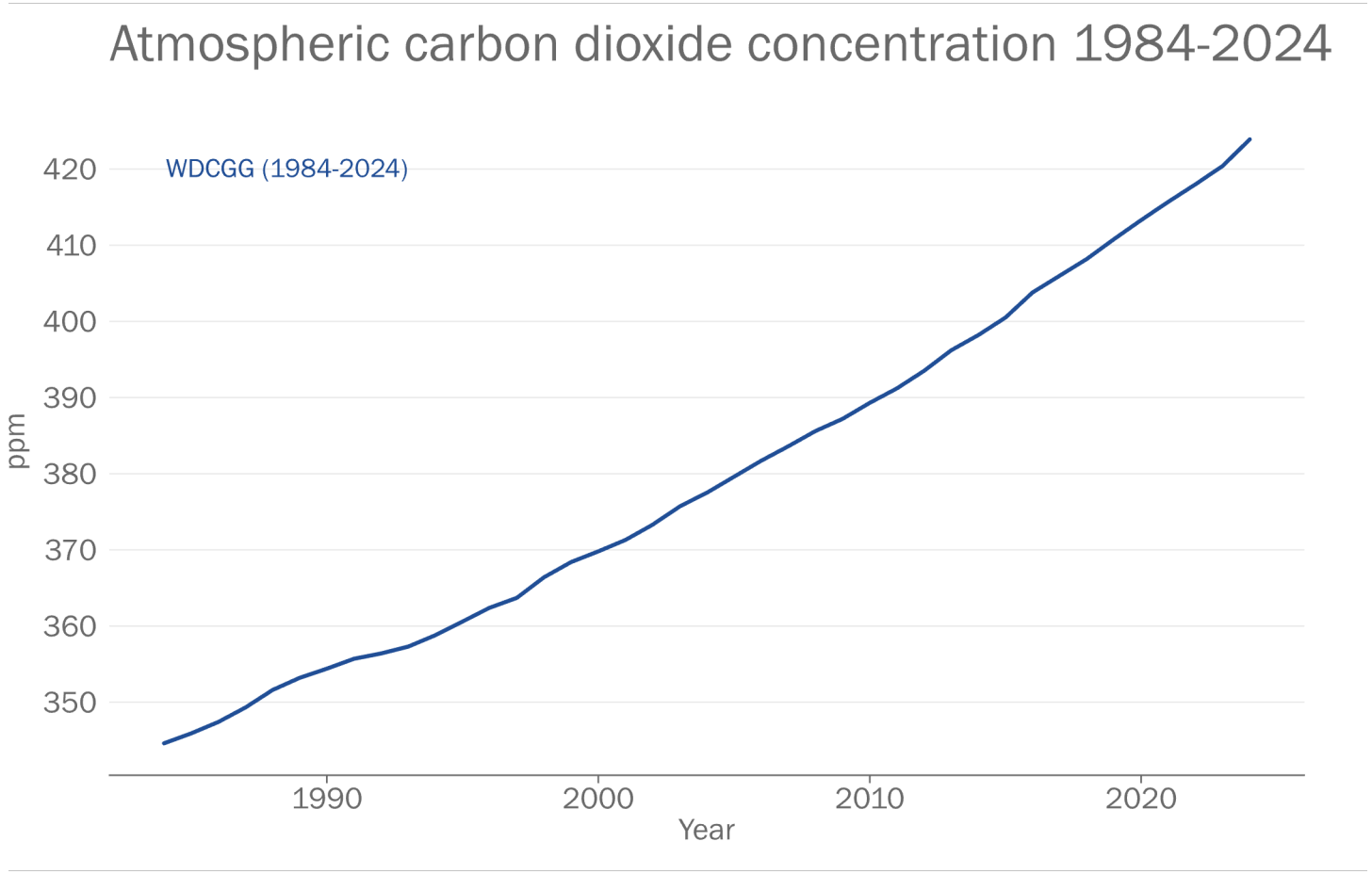
1950-2025 SCIENCE for ACTION

In 2024, atmospheric CO_2, methane and nitrous oxide **reached the highest levels in the last 800 000 years.**



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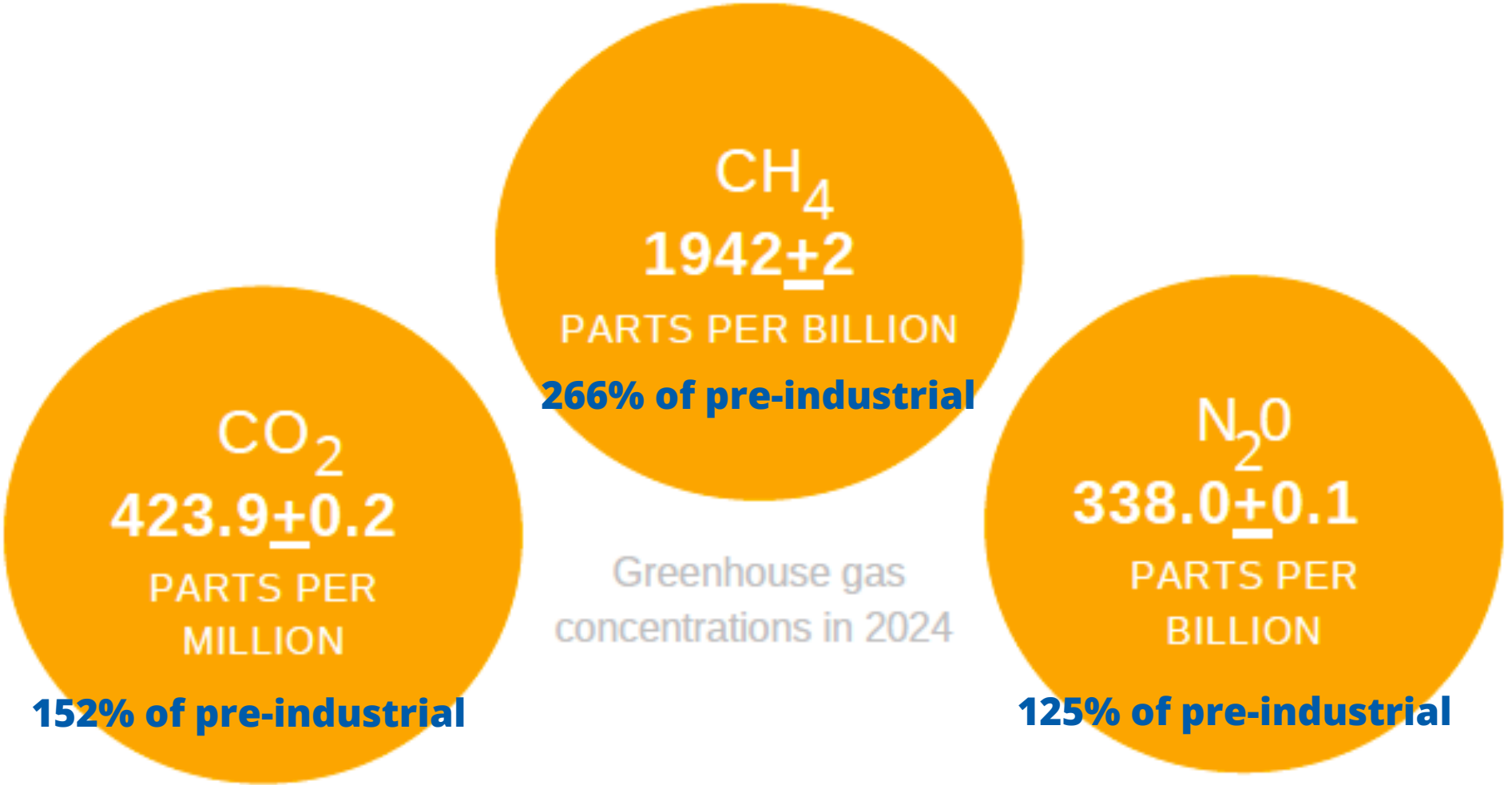

Greenhouse gas concentrations in 2024

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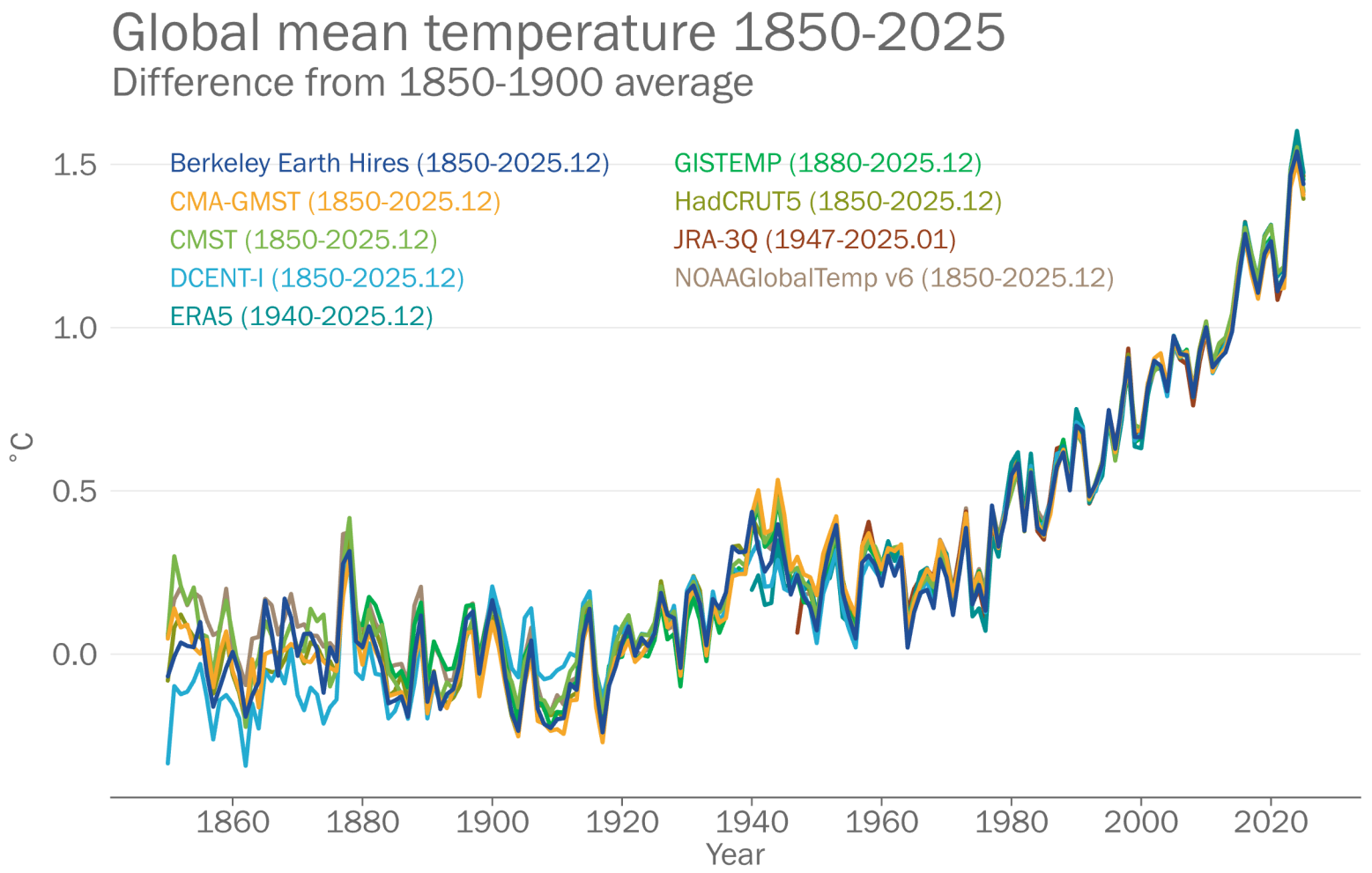
It was the second or third warmest year on record

1.43 ± 0.13 °C

above the 1850-1900 average.



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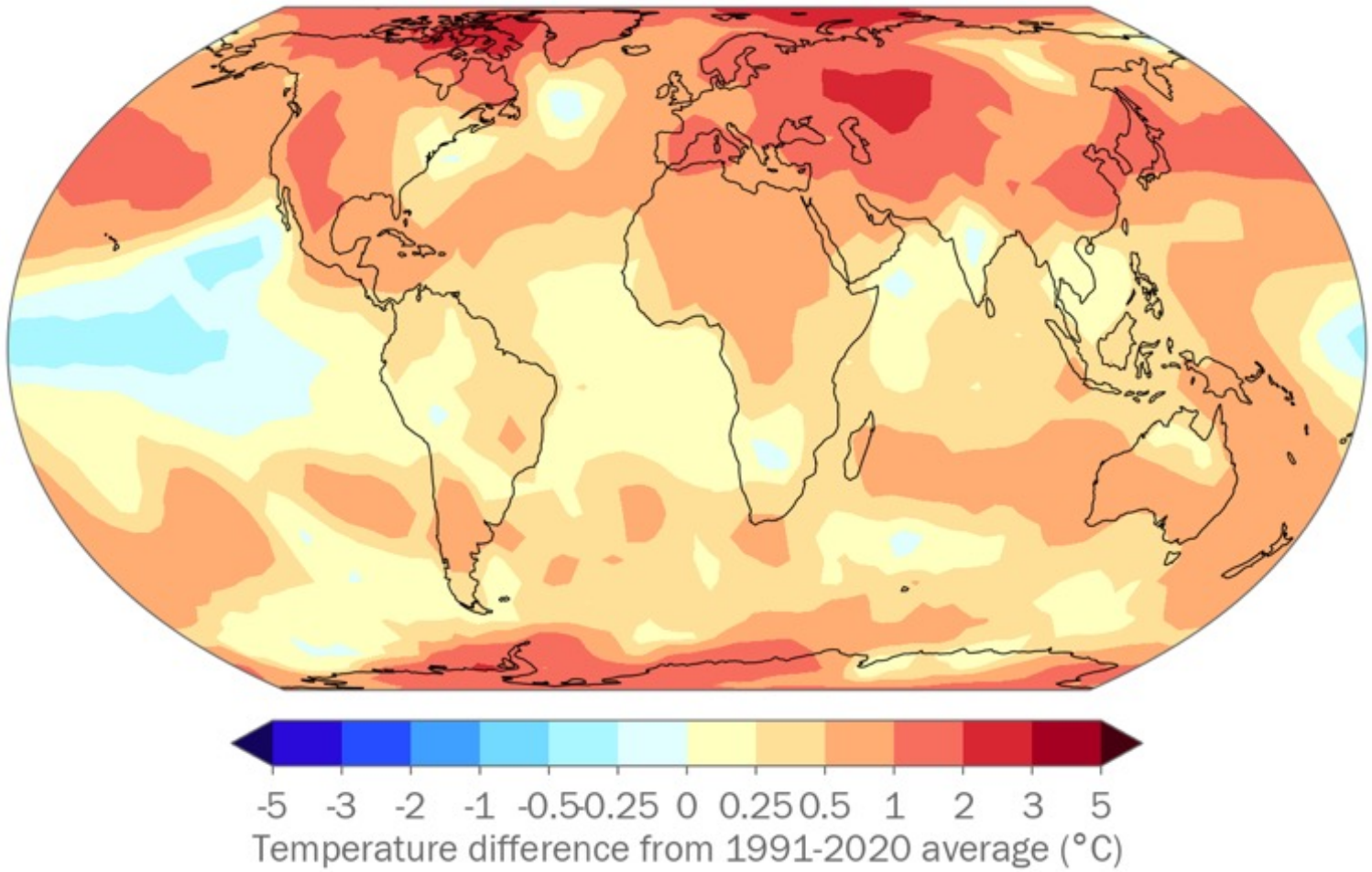
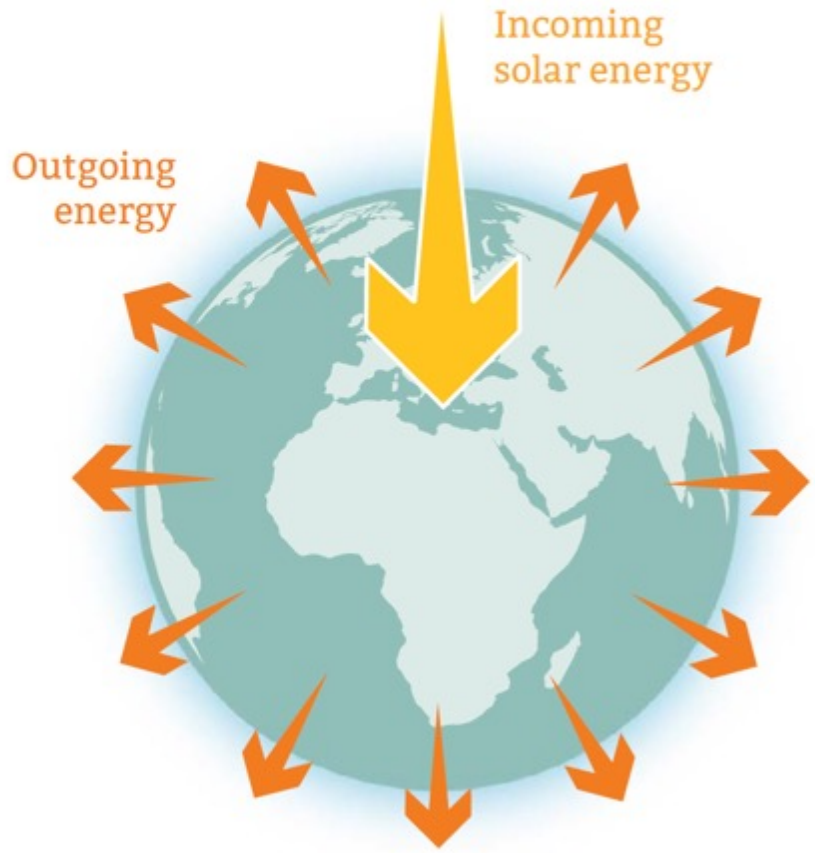
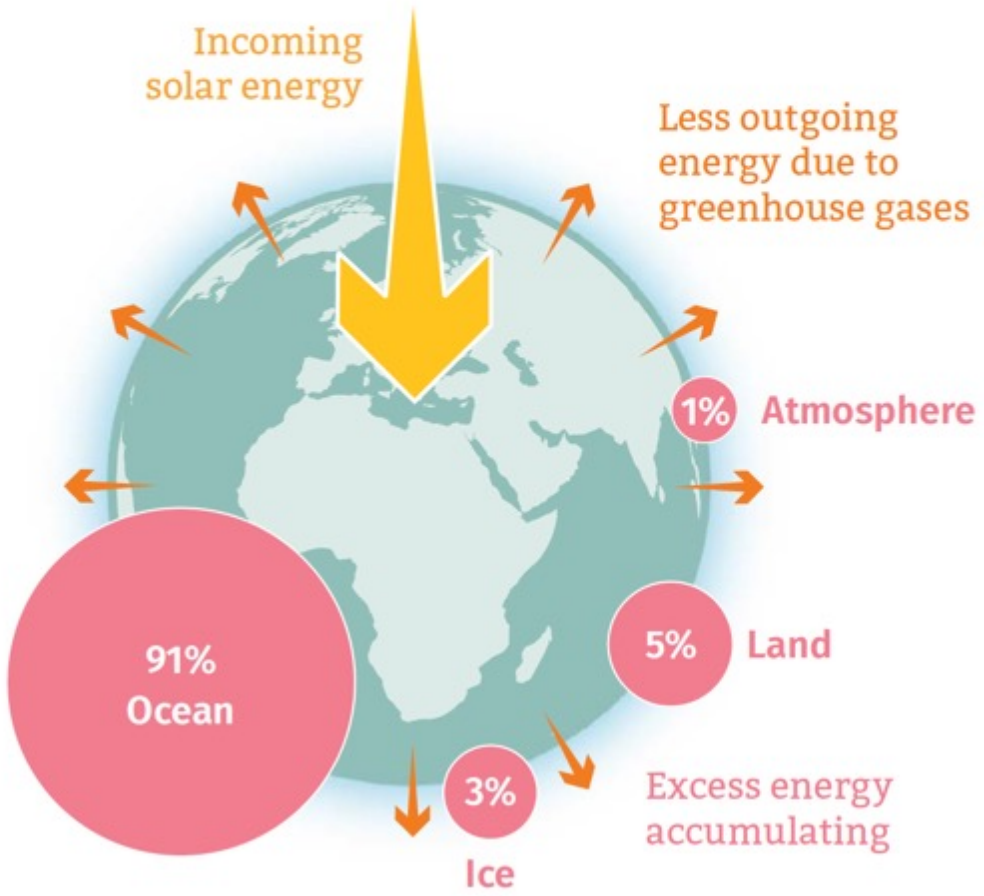
The majority of Earth's surface was warmer than the 1991-2020 long-term average



Stable climate: in balance



Today: imbalanced



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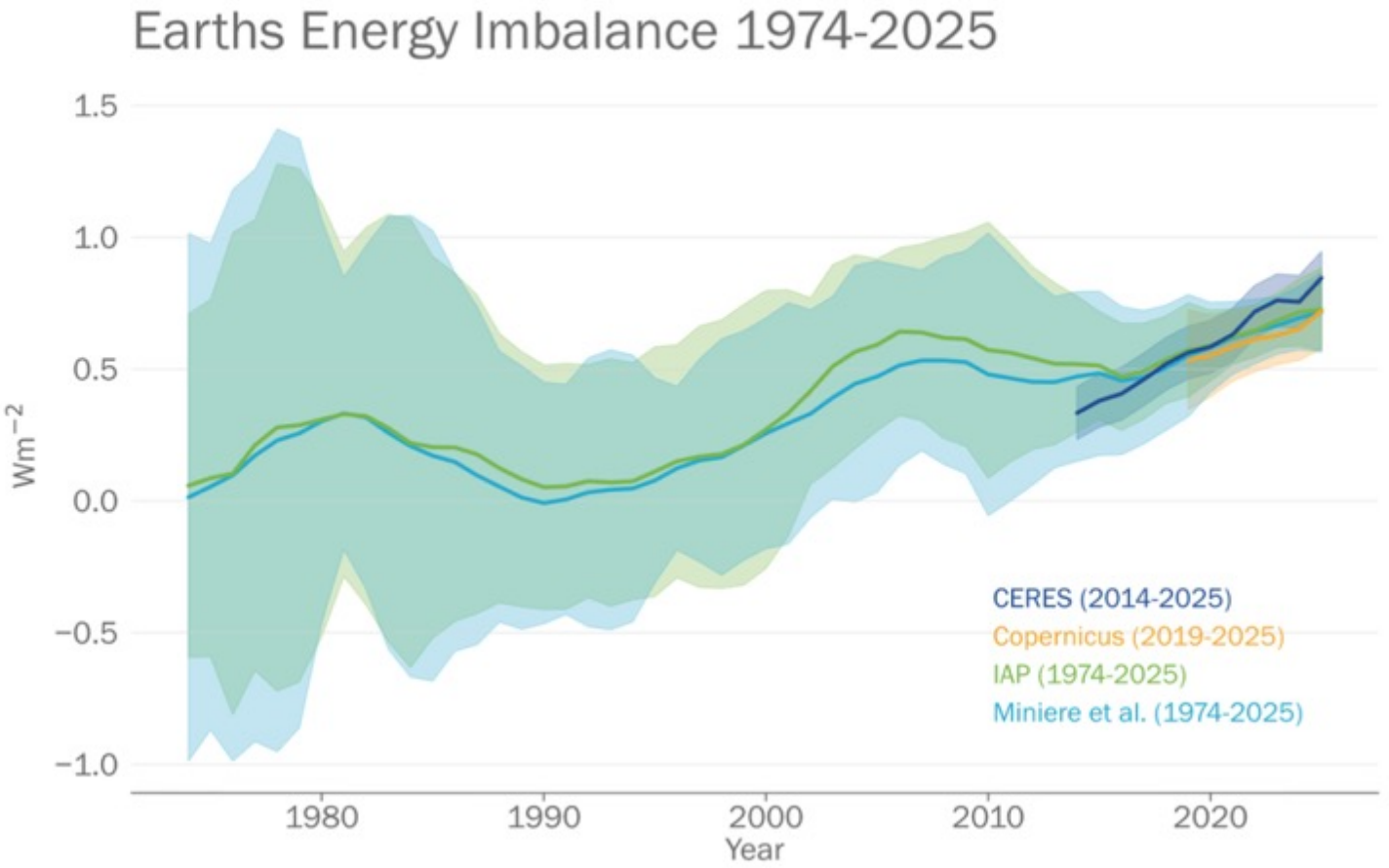
The Earth's climate is more out of balance than at any time in observed history, and reached a new high in 2025.



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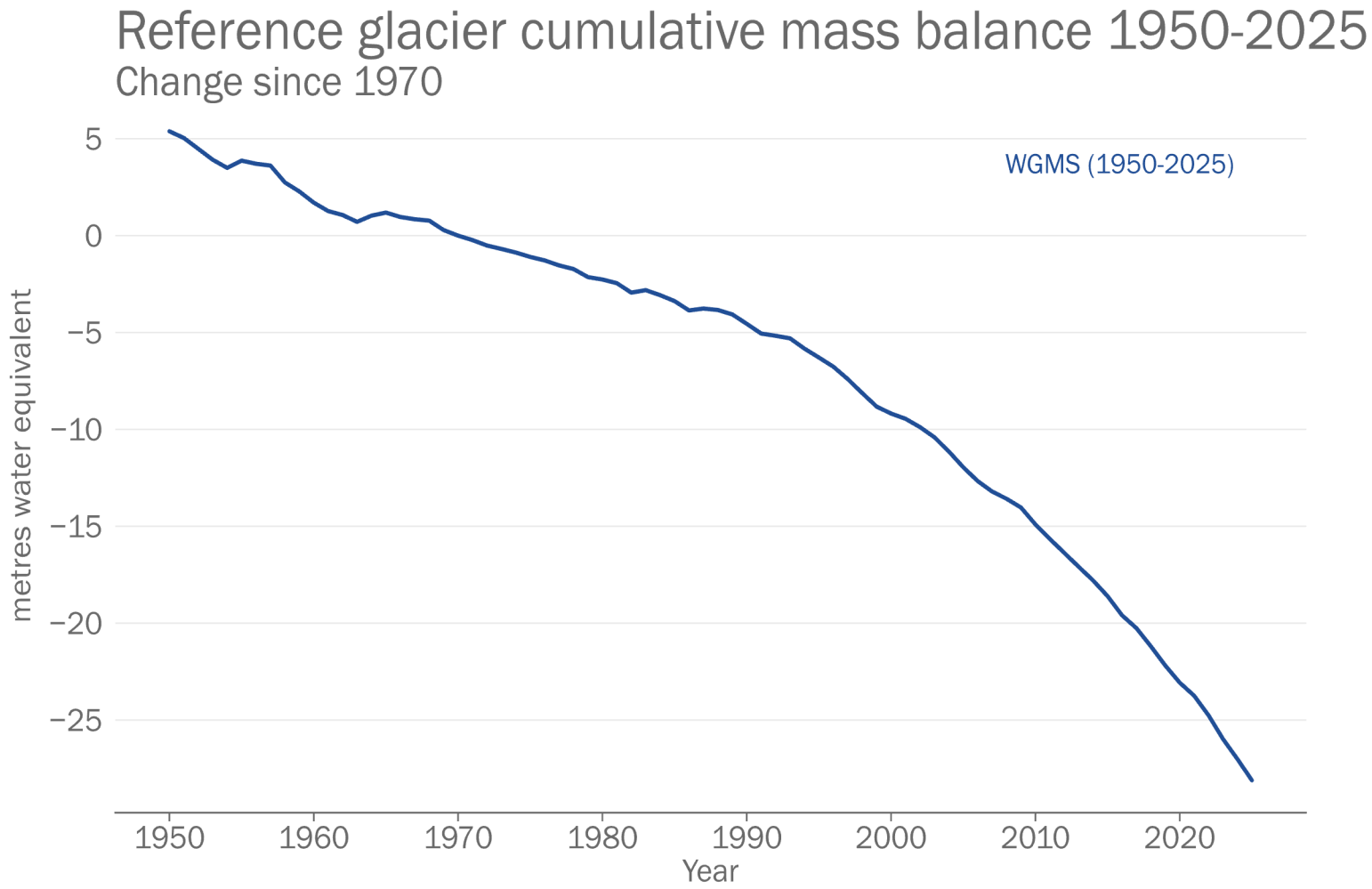
Glacier mass loss in 2024/2025 was one of the five most negative glacier mass balances on record.

Exceptional losses were experienced in Iceland, Colombia, Pacific coast of North Ameri



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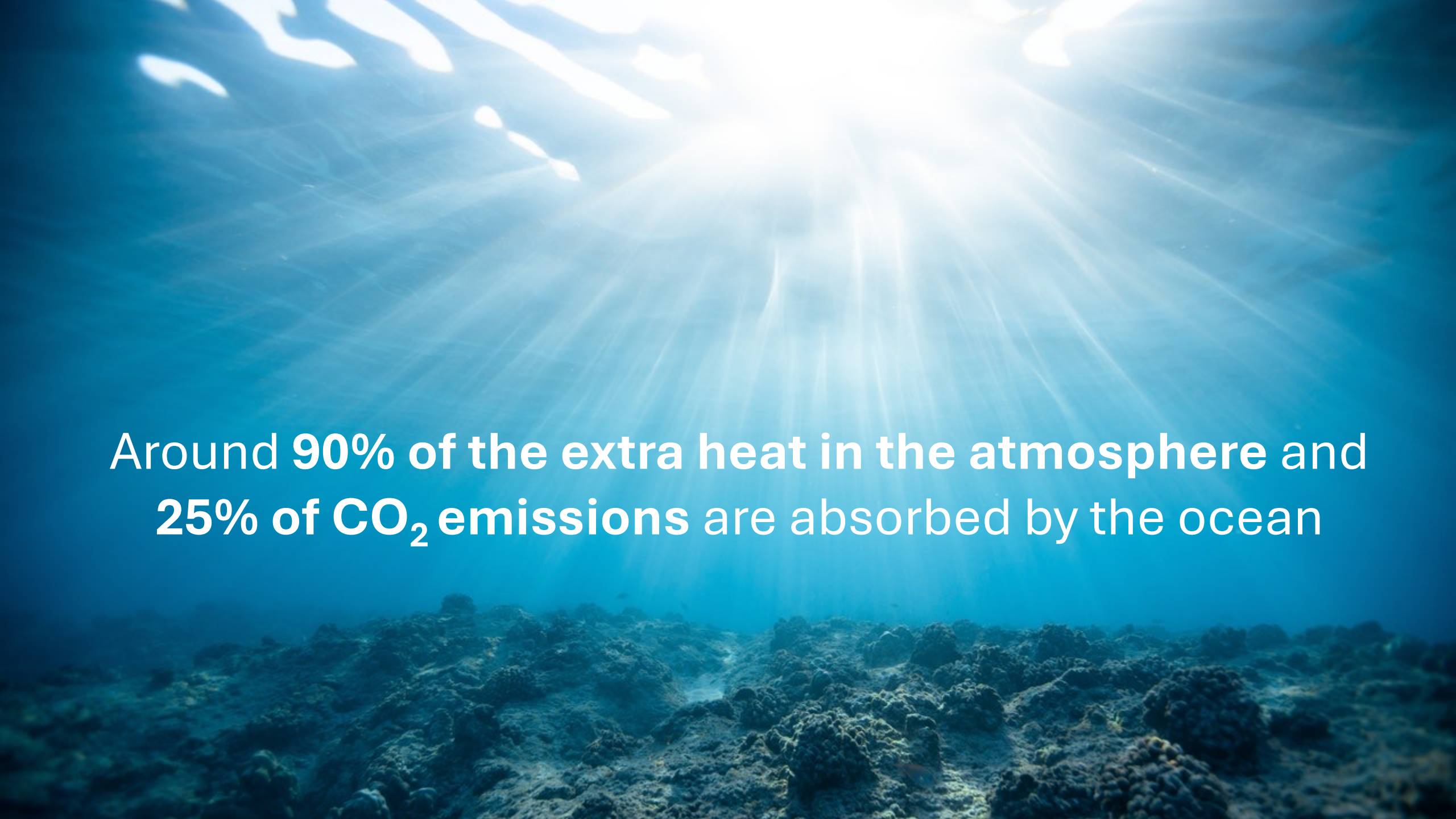
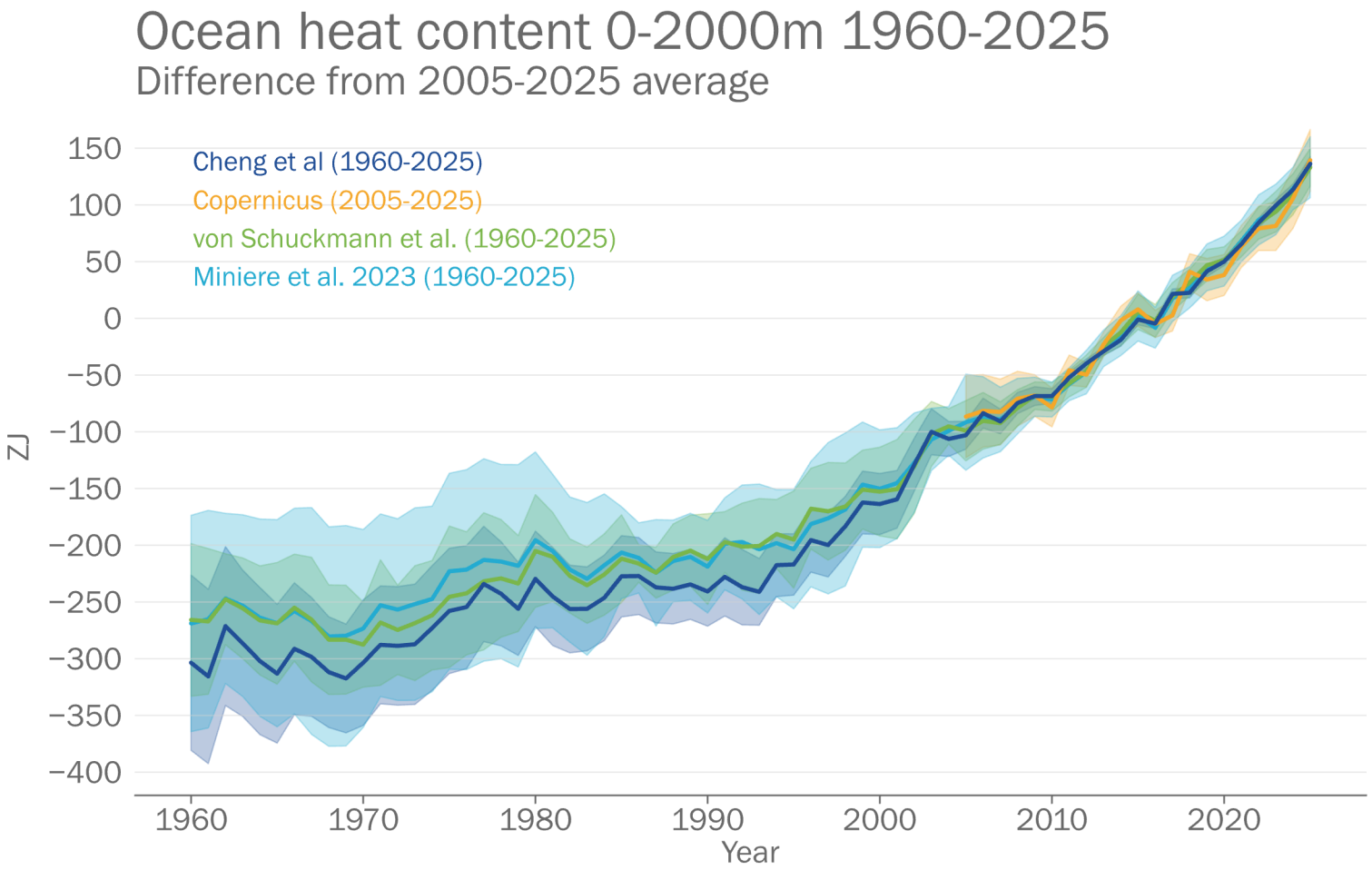

Around **90% of the extra heat in the atmosphere** and
25% of CO_2 emissions are absorbed by the ocean

In 2025, ocean heat content reached the highest level in the 66-year observational record.

The rate of warming from 2005–2025 is more than twice that observed from 1960–2005.



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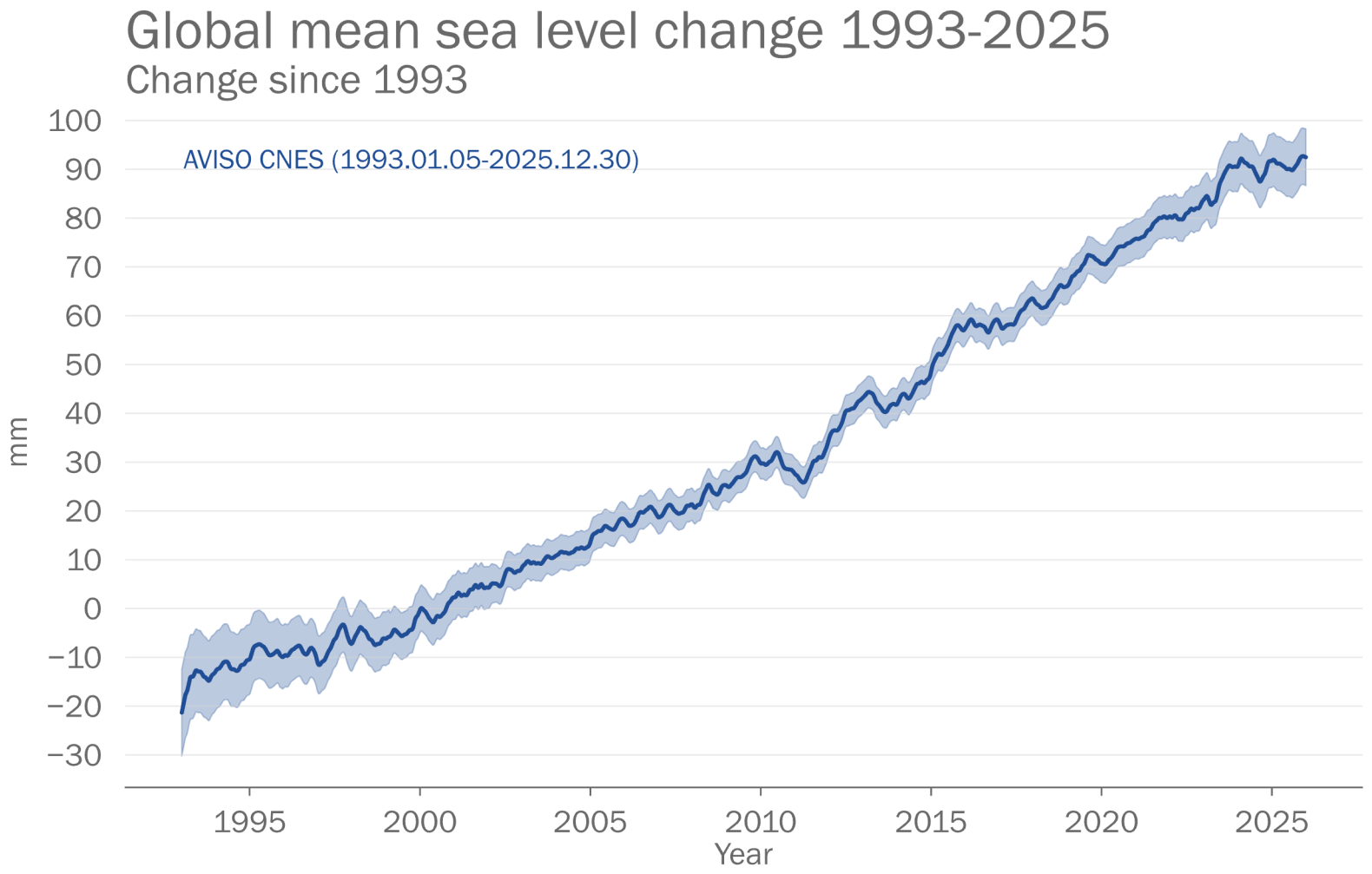
In 2025, global mean sea level was comparable to the record-high levels observed in 2024.

From 2012-2025, sea level rose at an annual rate of 4.75mm/yr, compared to 2.65mm/yr from 1993-2011.



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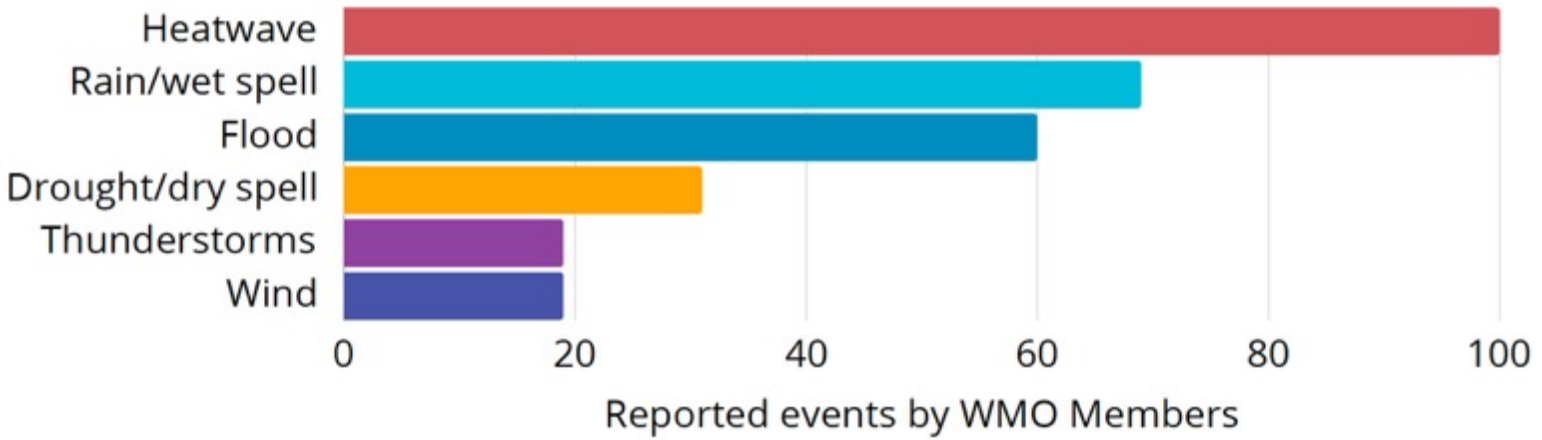
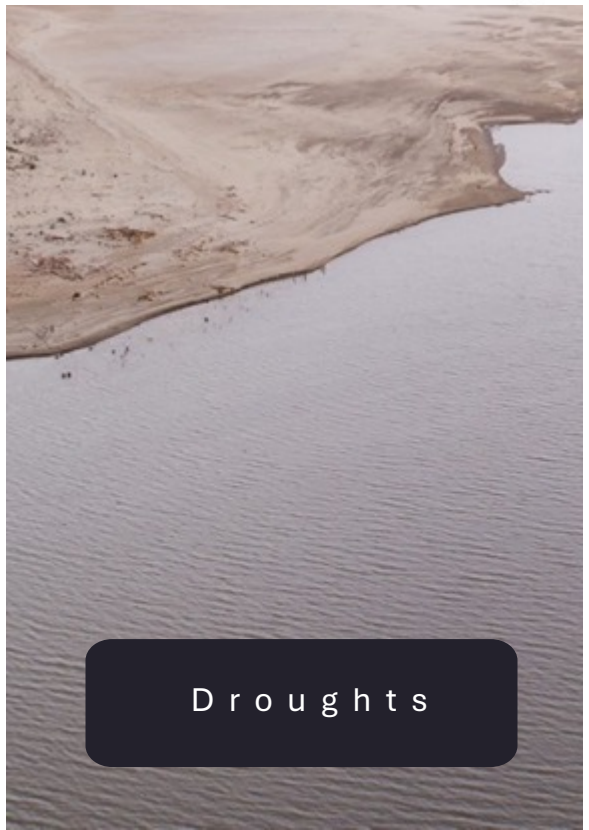
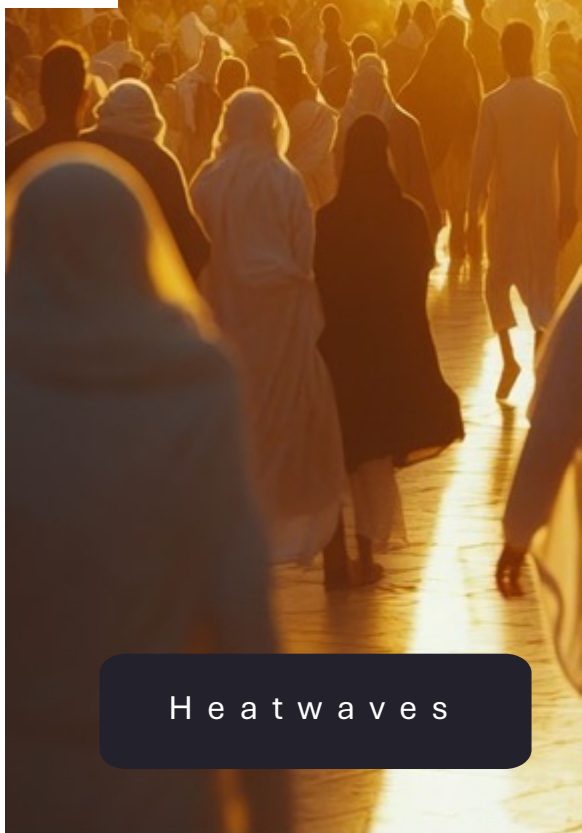
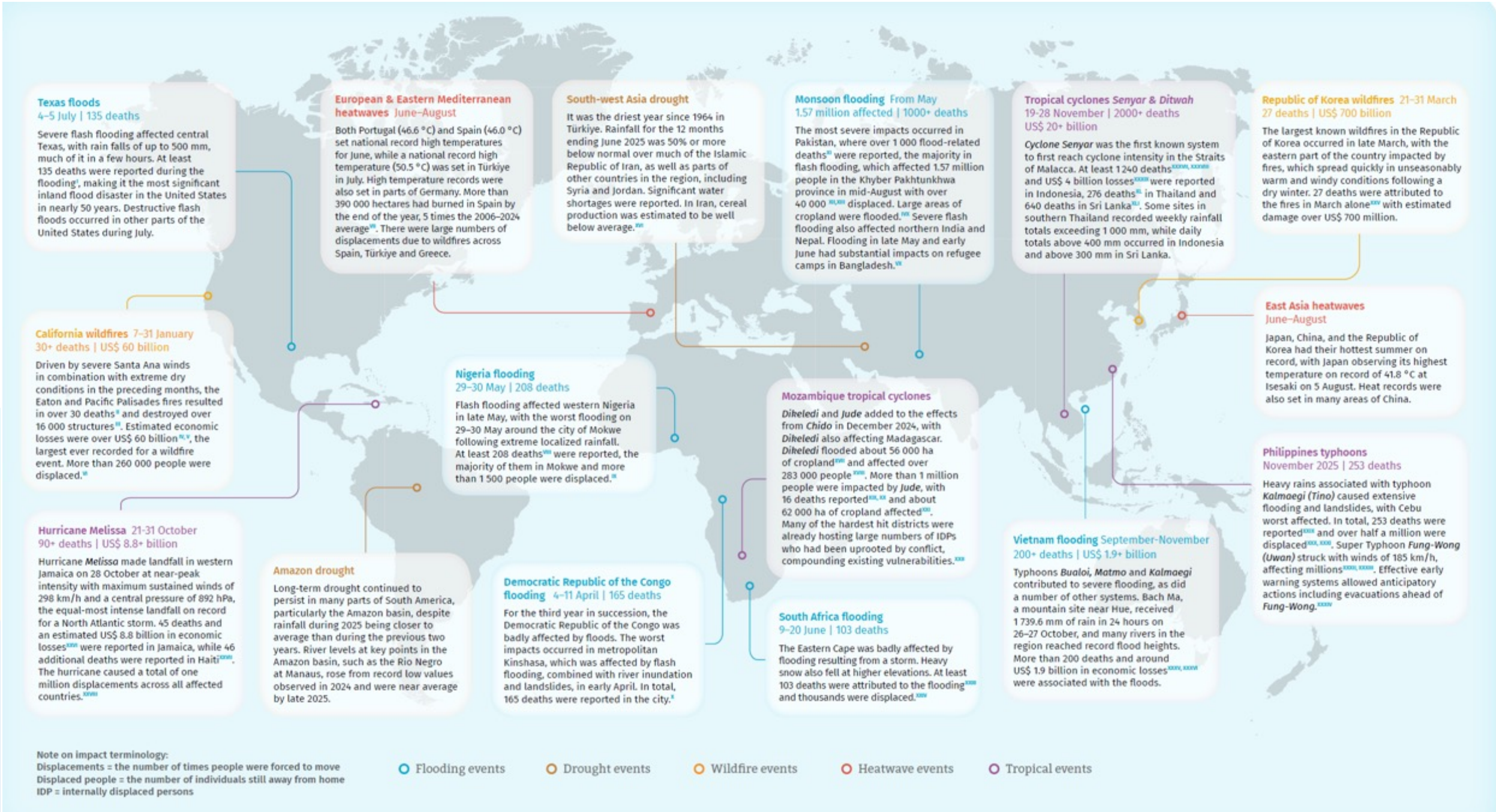
x2

Diverse **extreme events had widespread impacts** in 2025








Texas floods
4–5 July | 135 deaths
Severe flash flooding affected central Texas, with rain falls of up to 500 mm, much of it in a few hours. At least 135 deaths were reported during the flooding[i], making it the most significant inland flood disaster in the United States in nearly 50 years. Destructive flash floods occurred in other parts of the United States during July.
European & Eastern Mediterranean heatwaves June–August
Both Portugal (46.6 °C) and Spain (46.0 °C) set national record high temperatures for June, while a national record high temperature (50.5 °C) was set in Türkiye in July. High temperature records were also set in parts of Germany. More than 390 000 hectares had burned in Spain by the end of the year, 5 times the 2006–2024 average[vii]. There were large numbers of displacements due to wildfires across Spain, Türkiye and Greece.
South-west Asia drought
It was the driest year since 1964 in Türkiye. Rainfall for the 12 months ending June 2025 was 50% or more below normal over much of the Islamic Republic of Iran, as well as parts of other countries in the region, including Syria and Jordan. Significant water shortages were reported. In Iran, cereal production was estimated to be well below average.[xvi]
Monsoon flooding From May
1.57 million affected | 1000+ deaths
The most severe impacts occurred in Pakistan, where over 1 000 flood-related deaths[xi] were reported, the majority in flash flooding, which affected 1.57 million people in the Khyber Pakhtunkhwa province in mid-August with over 40 000 [xii,xiii] displaced. Large areas of cropland were flooded.[xiv] Severe flash flooding also affected northern India and Nepal. Flooding in late May and early June had substantial impacts on refugee camps in Bangladesh.[vi]
Tropical cyclones Senyar & Ditwah
19-28 November | 2000+ deaths
US$ 20+ billion
Cyclone Senyar was the first known system to first reach cyclone intensity in the Straits of Malacca. At least 1 240 deaths[xxxvi, xxxvii] and US$ 4 billion losses[xxxviii] were reported in Indonesia, 276 deaths[xl] in Thailand and 640 deaths in Sri Lanka[xli]. Some sites in southern Thailand recorded weekly rainfall totals exceeding 1 000 mm, while daily totals above 400 mm occurred in Indonesia and above 300 mm in Sri Lanka.
Republic of Korea wildfires 21–31 March
27 deaths | US$ 700 billion
The largest known wildfires in the Republic of Korea occurred in late March, with the eastern part of the country impacted by fires, which spread quickly in unseasonably warm and windy conditions following a dry winter. 27 deaths were attributed to the fires in March alone[xxv] with estimated damage over US$ 700 million.
East Asia heatwaves
June–August
Japan, China, and the Republic of Korea had their hottest summer on record, with Japan observing its highest temperature on record of 41.8 °C at Isesaki on 5 August. Heat records were also set in many areas of China.
California wildfires 7–31 January
30+ deaths | US$ 60 billion
Driven by severe Santa Ana winds in combination with extreme dry conditions in the preceding months, the Eaton and Pacific Palisades fires resulted in over 30 deaths[ii] and destroyed over 16 000 structures[iii]. Estimated economic losses were over US$ 60 billion[iv,v], the largest ever recorded for a wildfire event. More than 260 000 people were displaced.[vi]
Nigeria flooding
29–30 May | 208 deaths
Flash flooding affected western Nigeria in late May, with the worst flooding on 29–30 May around the city of Mokwe following extreme localized rainfall. At least 208 deaths[viii] were reported, the majority of them in Mokwe and more than 1 500 people were displaced.[ix]
Mozambique tropical cyclones
Dikeledi and Jude added to the effects from Chido in December 2024, with Dikeledi also affecting Madagascar. Dikeledi flooded about 56 000 ha of cropland[xvii] and affected over 283 000 people[xviii]. More than 1 million people were impacted by Jude, with 16 deaths reported[xix,xx] and about 62 000 ha of cropland affected[xxi]. Many of the hardest hit districts were already hosting large numbers of IDPs who had been uprooted by conflict, compounding existing vulnerabilities.[xxii]
Hurricane Melissa 21-31 October
90+ deaths | US$ 8.8+ billion
Hurricane Melissa made landfall in western Jamaica on 28 October at near-peak intensity with maximum sustained winds of 298 km/h and a central pressure of 892 hPa, the equal-most intense landfall on record for a North Atlantic storm. 45 deaths and an estimated US$ 8.8 billion in economic losses[xxvi] were reported in Jamaica, while 46 additional deaths were reported in Haiti[xxvii]. The hurricane caused a total of one million displacements across all affected countries.[xxviii]
Amazon drought
Long-term drought continued to persist in many parts of South America, particularly the Amazon basin, despite rainfall during 2025 being closer to average than during the previous two years. River levels at key points in the Amazon basin, such as the Rio Negro at Manaus, rose from record low values observed in 2024 and were near average by late 2025.
Democratic Republic of the Congo flooding 4–11 April | 165 deaths
For the third year in succession, the Democratic Republic of the Congo was badly affected by floods. The worst impacts occurred in metropolitan Kinshasa, which was affected by flash flooding, combined with river inundation and landslides, in early April. In total, 165 deaths were reported in the city.[x]
South Africa flooding
9–20 June | 103 deaths
The Eastern Cape was badly affected by flooding resulting from a storm. Heavy snow also fell at higher elevations. At least 103 deaths were attributed to the flooding[xxiii] and thousands were displaced.[xxiv]
Vietnam flooding September-November
200+ deaths | US$ 1.9+ billion
Typhoons Bualoi, Matmo and Kalmaegi contributed to severe flooding, as did a number of other systems. Bach Ma, a mountain site near Hue, received 1 739.6 mm of rain in 24 hours on 26–27 October, and many rivers in the region reached record flood heights. More than 200 deaths and around US$ 1.9 billion in economic losses[xxxii, xxxiii] were associated with the floods.
Philippines typhoons
November 2025 | 253 deaths
Heavy rains associated with typhoon Kalmaegi (Tino) caused extensive flooding and landslides, with Cebu worst affected. In total, 253 deaths were reported[xxxi] and over half a million were displaced[xxix, xxx]. Super Typhoon Fung-Wong (Uwan) struck with winds of 185 km/h, affecting millions[xxxiv, xxxv]. Effective early warning systems allowed anticipatory actions including evacuations ahead of Fung-Wong.[xxxiv]
Note on impact terminology:
Displacements = the number of times people were forced to move
Displaced people = the number of individuals still away from home
IDP = internally displaced persons
Flooding events
Drought events
Wildfire events
Heatwave events
Tropical events

Climate Risk = Operational Risk

The WMO data isn't just about the planet — it's about our mission, our staff, and the people we serve

🚚 Supply Chains

Extreme floods, droughts & storms increasingly disrupt freight, Non-Food Items procurement and cold chains. Sea level rise threatens port infrastructure.

🏥 Health Systems

Dengue, heat stroke, vector-borne disease expanding — health facilities face demand surges during climate events. Vulnerability and Capacity Assessment is now essential.

💧 WASH & Water

Glacier retreat threatens freshwater for ~2B people. Sea level rise salinises groundwater. Drought + flood cycles strain WASH programming.

⛺ Displacement

Extreme weather is the world's #1 driver of new displacement. Mozambique, Pakistan, DRC in 2025 — compounding pre-existing crises.

🌾 Food Security

SW Asia drought, Amazon drought, European heatwaves all hit crop yields. WFP/FAO flagged cascading food insecurity from climate events.

👷 Staff & Operations

Field staff face heat stress, flood risk, operational disruption. 2025 European heatwave: national records in Portugal, Spain, Türkiye.

WMO Coordination Mechanism (WCM):

Co-designed and tailored solution for UN and Humanitarian Agencies (HA)

Early Warnings for All

WCM: Strategic component of EW4ALL

supporting crisis-prone and conflict-affected regions

Situational awareness and expert advice to UN & HA

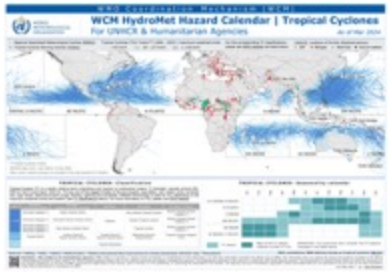
"WCM curates **authoritative** weather, climate and water information and **expert advice** from WMO Members / Centres to improve **situational awareness** and **crisis support** by the UN and HA."

WCM plays also an important role in terms of **capacity building**

Global

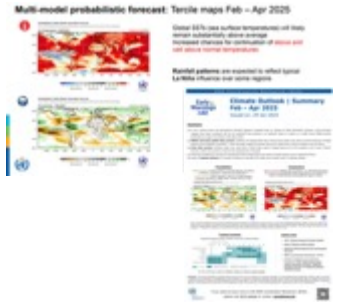
Local / Regional

HAZARD CALENDARS



WEEKLY & TCS SCANS

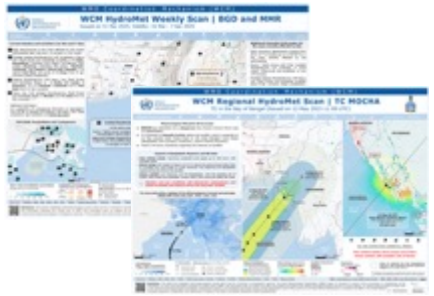
CLIMATE BRIEFINGS & SCANS

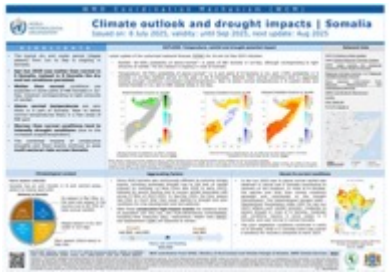


WCM Delivery to UN and HA
Since 2022

600+

(scans and briefings)





years | days / week | month / season

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1950-2025 SCIENCE for ACTION

Heading towards 3°C.

Every sector must act

Emissions Still Rising

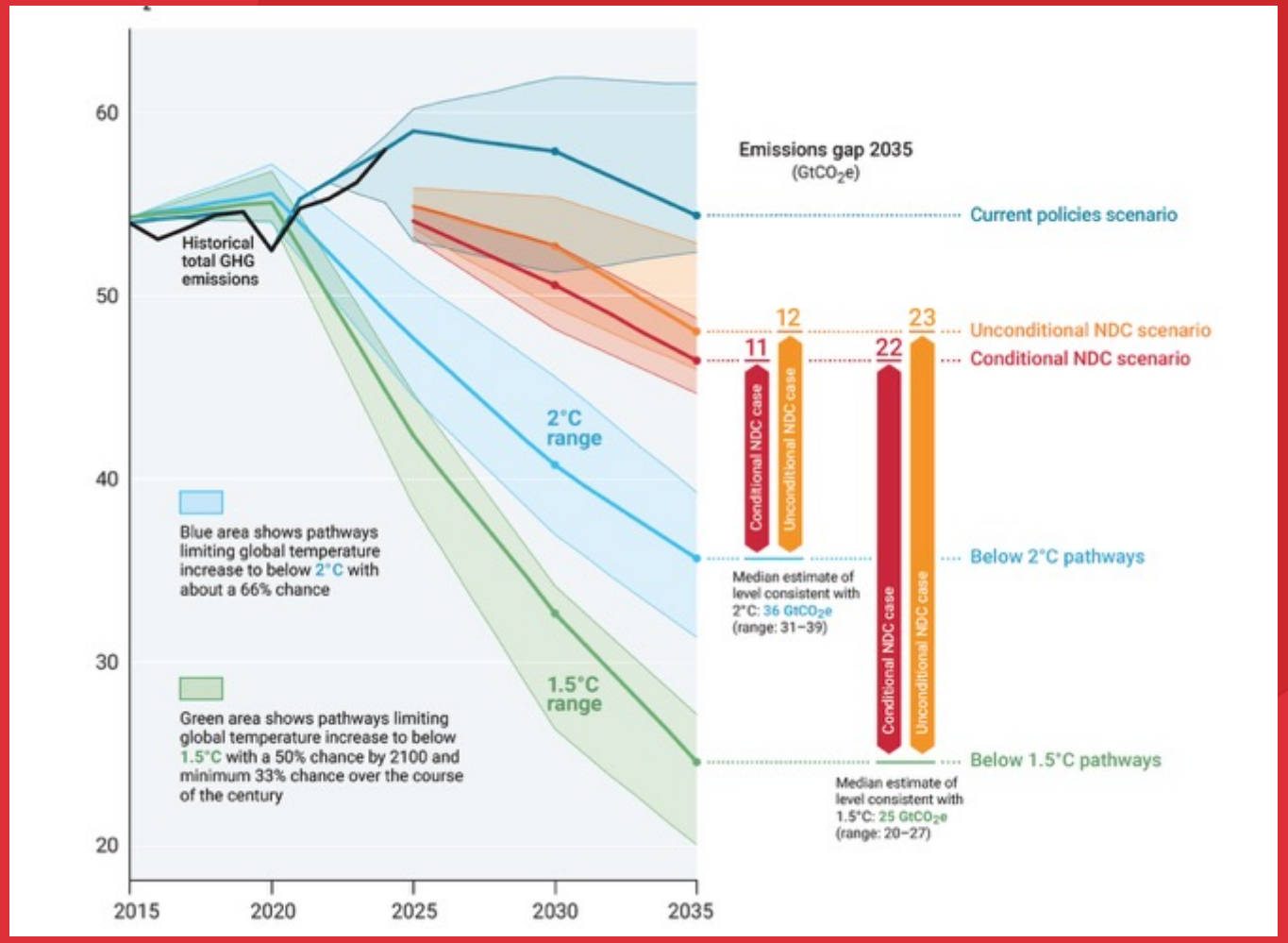
Global GHG emissions hit 57.7 $GtCO_2e$ in 2024 — a 2.3% increase from 2023, driven by land-use change and continued fossil fuel use.

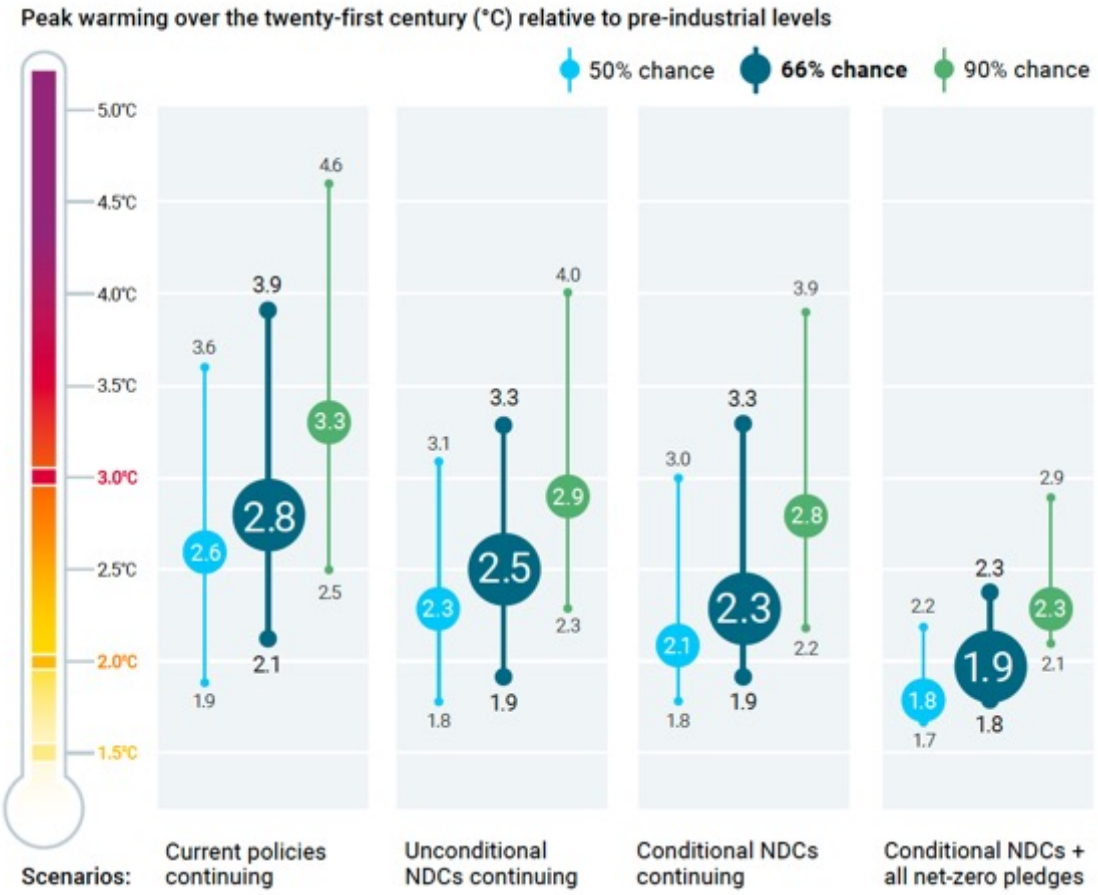
The Emissions Gap

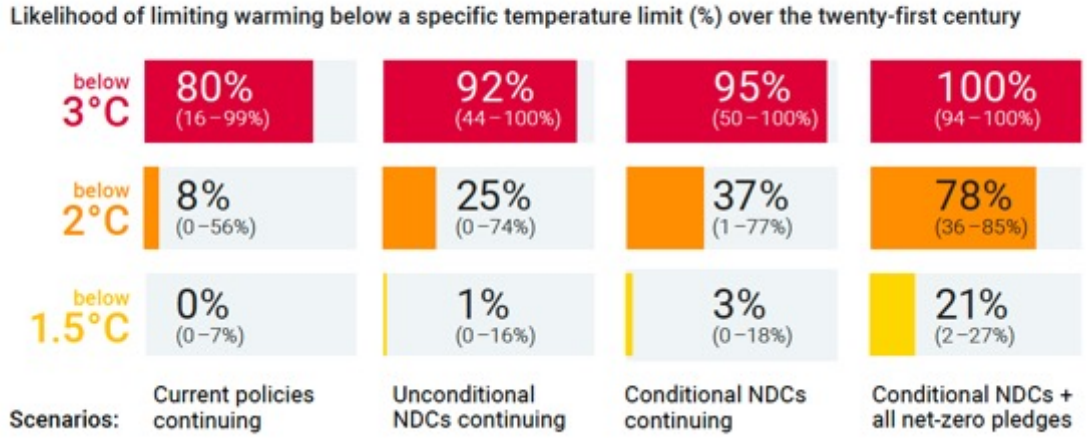
To limit warming to 1.5°C, emissions must fall 42% by 2030 vs. 2019 levels. Current NDCs deliver only ~11%. The gap is 20 $GtCO_2e$ per year.

NDC Coverage Failure

Only 60 parties covering 63% of global emissions submitted new NDCs by the deadline. No G20 member strengthened their 2030 target.







Current Trajectory

Current policies put the world on track for 2.8°C warming by 2100. Full NDC implementation would only reduce this to 2.5°C — still far above 1.5°C.

The Cost of Delay

Every year of inaction locks in carbon-intensive infrastructure, raises adaptation costs, and increases reliance on costly, uncertain CO_2 removal.

What Would Work

Full conditional NDCs + all net-zero pledges would limit warming to 1.9°C. Technologies exist. The gap is political will and finance — not solutions.

THE 2030 IMPERATIVE

Why Halving Emissions by 2030 Is Non-Negotiable

1. **The 1.5°C threshold** — 2025 at +1.43°C means we are knocking on the door. A single decade of inaction locks us into 3°C — with dramatically worse impacts for vulnerable populations.

2. **Cascading risks** — Floods disrupt operations → food insecurity rises → displacement increases → health systems overwhelmed. Each 0.1°C matters for the people we serve.

3. **Shrinking window** — every year of delay requires steeper future cuts. The WMO data confirms: the atmosphere is still filling up.

4. **Our responsibility** — Aid and health organisations are trusted voices with reach and credibility. Acting on our own emissions and influencing our ecosystems creates a domino effect.

5. **Solutions exist now** — Transport, procurement, energy, waste — all reduction pathways are mapped. The CAA exists to support implementing them before 2030.

REFRAMING CLIMATE ADAPTATION

Adaptation as a Foundation for Our Future

From moral obligation to shared interest — stability, prosperity, and security

Adaptation Finance Is Not Charity — It Is a Strategic Investment in Our Shared Future

1. **The core argument** — Framing adaptation as solidarity has made it politically synonymous with ODA — so when aid budgets shrink, adaptation finance shrinks with them. The reframe: climate vulnerability anywhere creates economic risk everywhere. Adaptation finance is not charity; it is investment in shared stability, prosperity, and security.

2. **Stability** — Climate shocks erode institutions, fiscal space, and governance capacity — and spread across borders. Pakistan's 2022 floods ($30B damages) triggered sovereign downgrades by S&P, Moody's, and Fitch, raising borrowing costs for a country already unable to recover. Creditor exposure falls on developed-country banks and bondholders.

3. **Prosperity** — Disruption anywhere transmits everywhere. The 2023–24 Panama Canal drought cut daily transits by one-third, affecting 5% of global maritime trade. West Africa's 2024 cocoa crisis — driven by climate-fuelled disease and drought — sent global prices up 300%, compressing margins across the confectionery industry worldwide.

4. **Security** — Climate is a threat multiplier. The Sahel warms 1.5× faster than the global average; 80% of farmland is degraded. Lake Chad has shrunk by over 90%, devastating livelihoods and intensifying resource competition. The resulting displacement, state fragility, and humanitarian costs do not stay within borders.

5. **The imperative** — Over $300 billion/year will be needed for adaptation by 2035. This reframe does not replace CBDR-RC obligations — it reinforces them with a logic of shared interest. Commitments grounded in both principle and strategic self-interest are more durable. The moral case and the economic case are the same case.

Thank you

Additional resources:

State of the Climate 2024

Interactive Report

Data Dashboard

IPCC Projections

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