

PFM4CA

Climate Change and our Response

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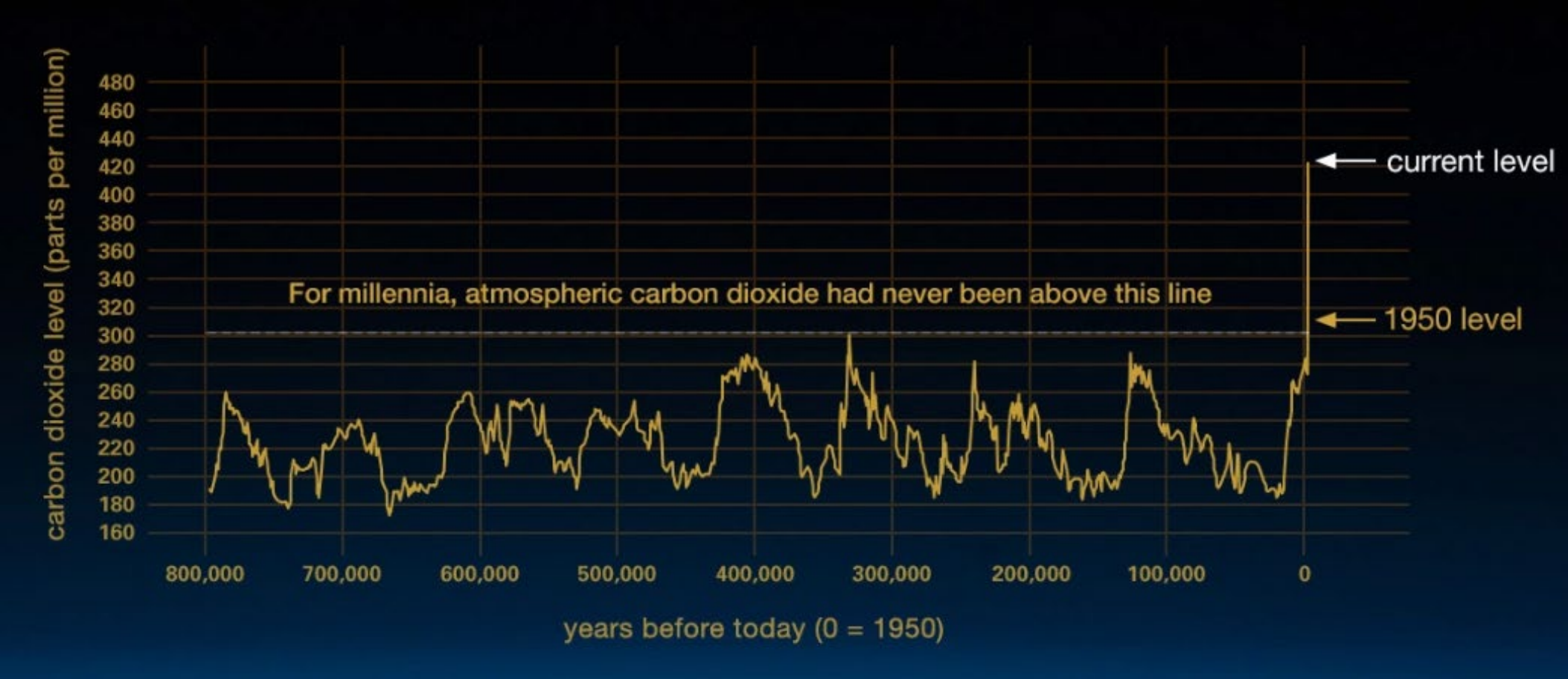
Structure

- 1. Climate science**
- 2. Global response to climate**
- 3. National response to climate**
- 4. Climate finance**



1. Climate change

Atmospheric CO₂ (2022 record of 417 ppm, NOAA)



Current warming is happening at a rate not seen in the past 10,000 years

1. Climate change

IPCC


- The IPCC was created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks, as well as to put forward adaptation and mitigation options
- The IPCC prepares comprehensive Assessment Reports about knowledge on climate change, its causes, potential impacts and response options.



1. Climate change

IPCC

- Assessment Reports (ARs) – AR6 of 2023 – 1,000 authors (33% women) and 7 years to write.
- Special Reports (SR) – e.g., SRREN (renewable energy), SROC (ocean & cryosphere).
- Global South – 84% world population but 31% of IPCC author contributions.
- Summary for Policy Makers

The image shows the cover of the IPCC AR6 Synthesis Report. It features a dark blue background with a faint, glowing aurora borealis in the sky. The title 'AR6 Synthesis Report: Climate Change 2023' is written in white, bold, sans-serif font. Below the title, there is a line of smaller white text providing context about the report's finalization.

AR6 Synthesis Report: Climate Change 2023

The IPCC finalized the Synthesis Report for the Sixth Assessment Report during the Panel's 58th Session held in Interlaken, Switzerland from 13 - 19 March 2023.

1. Climate change

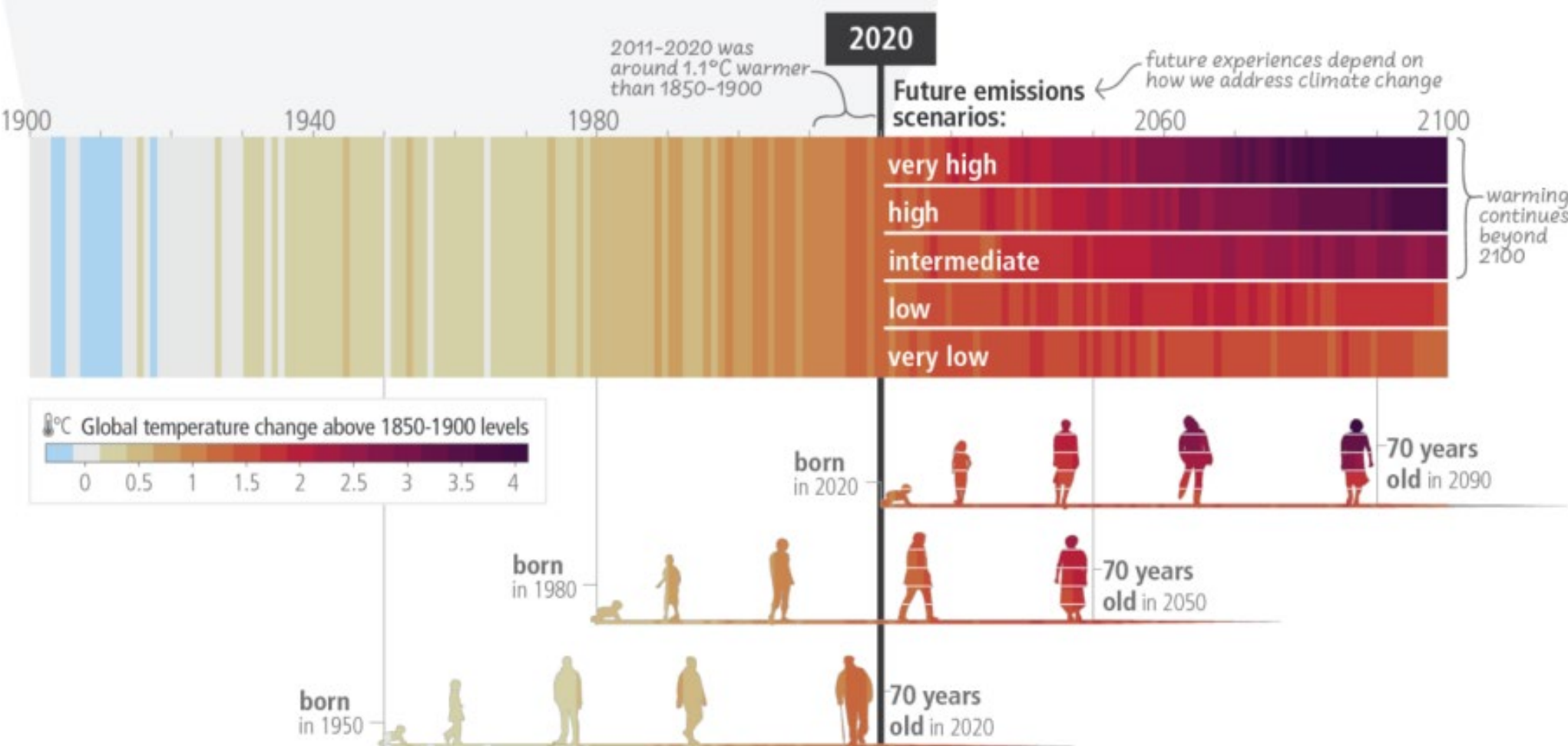
AR6

- Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020.
- Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people (high confidence).



1. Climate change

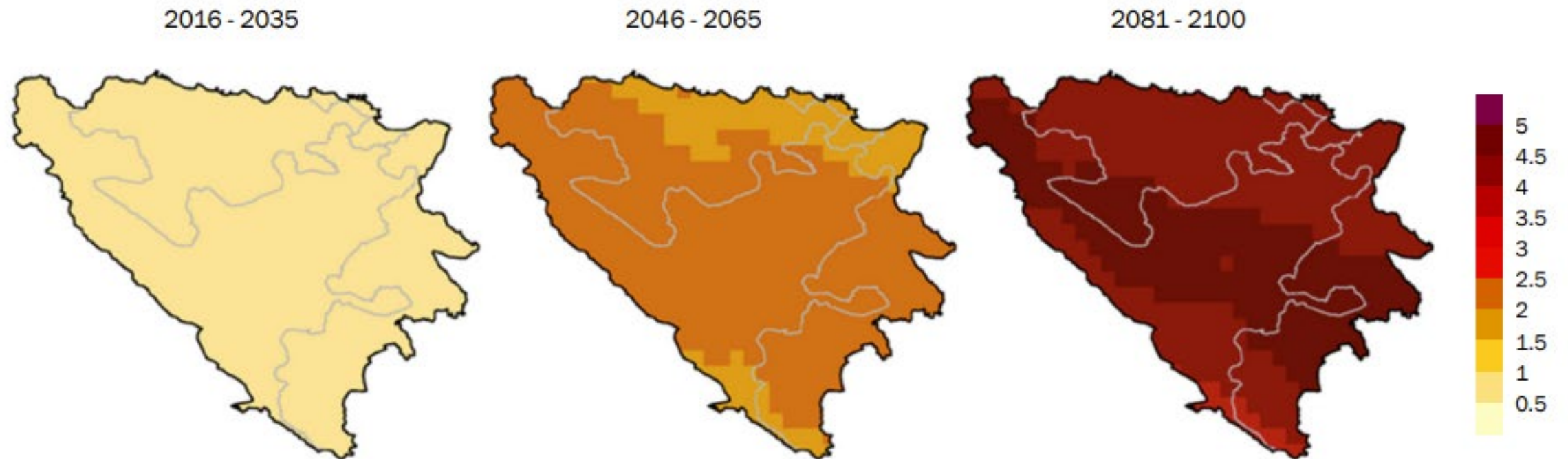
AR6 – future temperature depends on emissions scenarios



1. Climate change

Future temperature vary by country:

FIGURE 2.1. Change in the daily mean temperature (in °C) relative to the reference period 1986–2005



Source: Bosnia and Herzegovina National Adaptation Plan (NAP).

1. Climate change

AR6 – climate change will have many impacts



Water availability and food production

 ..	 ..	 .	 ..
Physical water availability	Agriculture/crop production	Animal and livestock health and productivity	Fisheries yields and aquaculture production




Health and well-being

 ..	 ...	 ...	 ...
Infectious diseases	Heat, malnutrition and harm from wildfire	Mental health	Displacement

Cities, settlements and infrastructure

 ...	 ...	 ...	 ..
Inland flooding and associated damages	Flood/storm induced damages in coastal areas	Damages to infrastructure	Damages to key economic sectors



Biodiversity and ecosystems

 ...	 ...	 ...
Terrestrial ecosystems	Freshwater ecosystems	Ocean ecosystems

Includes changes in ecosystem structure, species ranges and seasonal timing

Key

Observed increase in climate impacts to human systems and ecosystems assessed at global level

-  Adverse impacts
-  Adverse and positive impacts
-  Climate-driven changes observed, no global assessment of impact direction

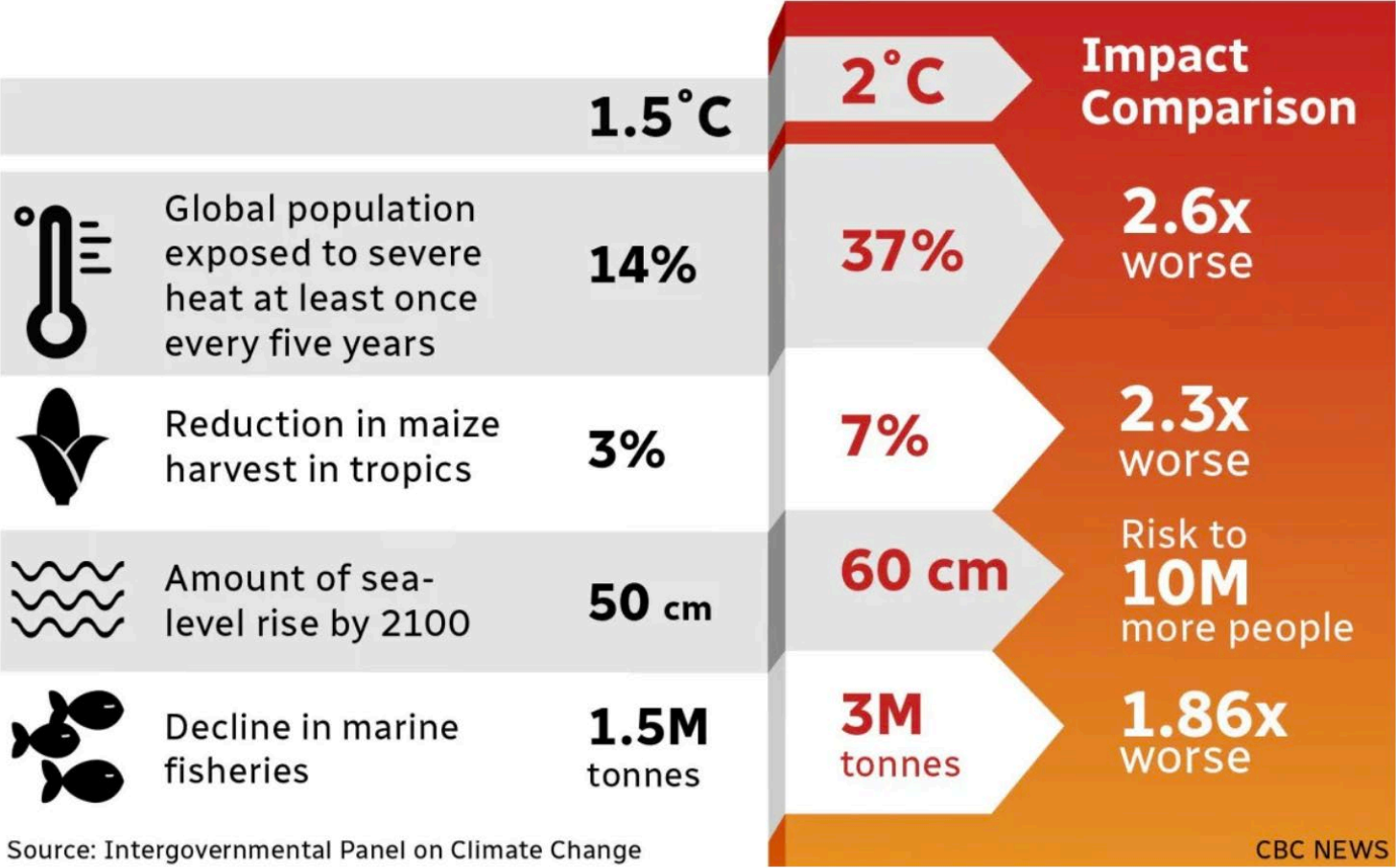
Confidence in attribution to climate change

- ... *High or very high confidence*
- .. *Medium confidence*
- . *Low confidence*

1. Climate change

More CO₂, more temperature, more impact

Human health, safety, food security impacts



1. Climate change

Different physical vulnerabilities by country

Country	Drought hazard	Water stress hazard	Heat hazard	Land slide hazard	Riverine flood hazard	Coastal flood hazard	Hailstorm hazard	ND-GAIN adaptation score ¹⁸ (readiness and vulnerability)
Armenia	North: Medium South: Medium-High	North: Low Central: Extremely High	Low, except Aras valley	High in mountain ranges	Medium	n.a.	Medium	Medium Score=56.9 49th out of 185 countries
Azerbaijan	Medium-High	Extremely High in Kura lowland Low-Medium in mountain ranges	Moderate-High	High in mountain ranges	High	n.a.	High	Medium Score=53.3 65th out of 185 countries
Georgia	Medium	Low-Medium except for Kakheti (Medium-High)	Low in mountains. Severe in Kolkheti plain	High in mountain ranges	High	n.a.	Low, except Tien Shan range	Medium Score=58.5 38th out of 185 countries
Kazakhstan	Medium to High. Highest in North	Extremely High towards the west. Low in North and East	Moderate/High in southwest Slight/Low in northeast	High in Tien Shan Mountain range	Medium	n.a.	Medium	Low Score=59.8 36th out of 185 countries

1. Climate change

Different socio-economic vulnerabilities by country (3yr average 2020-2022)

Country	Percent of population facing food insecurity
Armenia	<10
Azerbaijan	10–25
Georgia	25–40
Kazakhstan	<10
Kyrgyz Republic	<10
Pakistan	40–60
Tajikistan	No data
Turkmenistan	No data
Uzbekistan	25–40

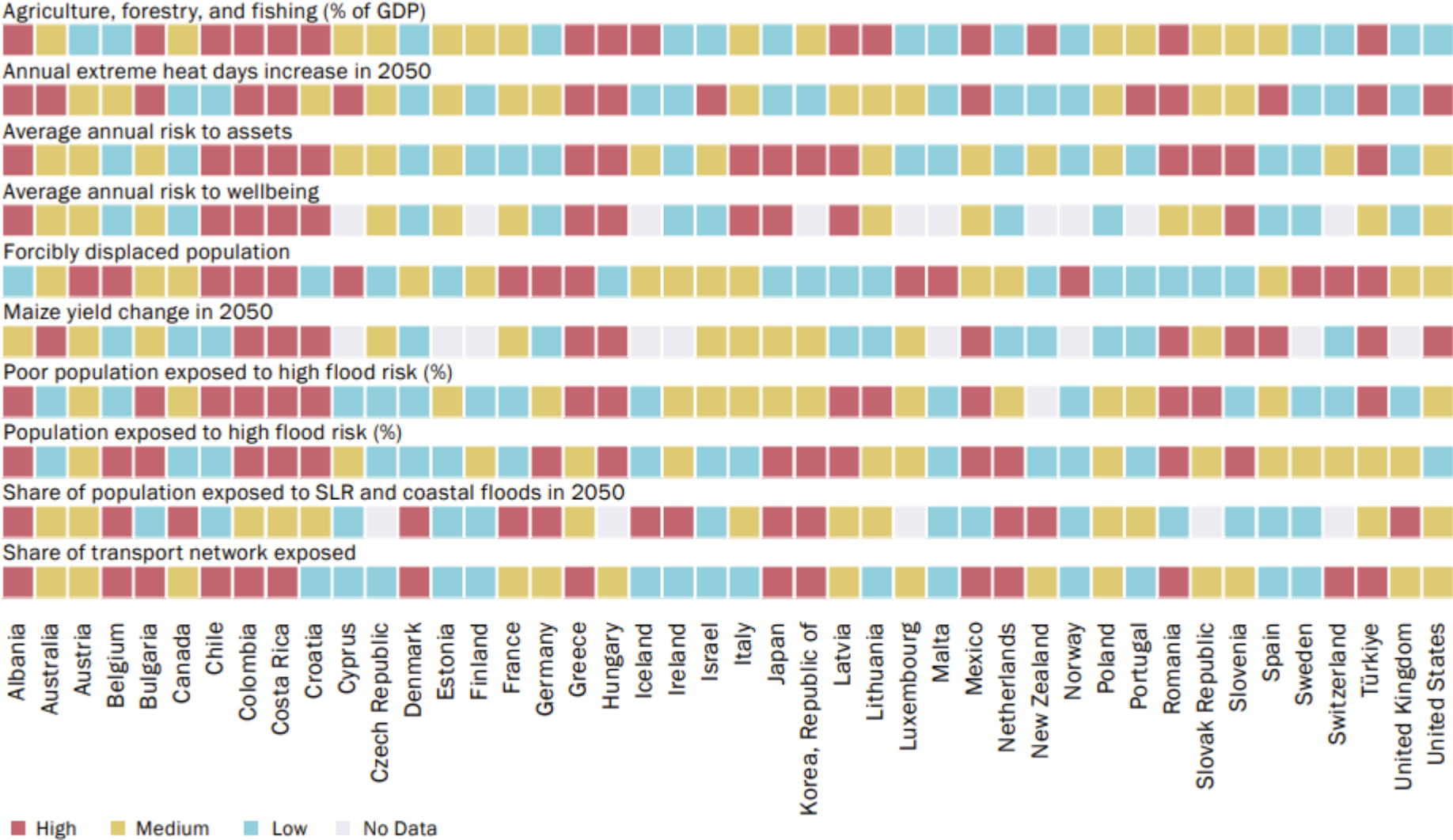
1. Climate change

Different transition effects by country

Country	High-Level Assessment of Exposure to CBAM	Key Exported Carbon-Intensive Goods/Affected Industries
Georgia	High (high dependency on electricity to be exported)	Electricity, minerals, chemicals ²⁵
Kazakhstan	High (high dependency on fossil fuel with high exports)	Fuel oil/gas, minerals, chemicals, metals (iron, steel) ²⁶
Kyrgyz Republic	Low (Moderate Low dependency on fossil fuels with low exports)	Fuels, metals, minerals ²⁷
Tajikistan	Low (Moderate Low dependency on fossil fuels with low exports)	Metals ²⁸ copper, zinc, lead
Turkmenistan	Moderate (moderate high dependency on fossil fuels with moderate exports)	Gas fuels, petrochemicals, chemicals ²⁹
Uzbekistan	Moderate (moderate high dependency on fossil fuels with high moderate exports)	Industrial goods, metals, chemicals ³⁰
Pakistan	High (high dependency on fossil fuels with high exports)	Textiles, clothing, cement, metals, steel, chemicals ³¹

1. Climate change

Different transition effects by country



Source: World Bank Climate Change Group

2. Global response

History of UNFCCC

- United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992 (now 196 countries + EU).
- Framework Convention – decision by consensus.
- Goal of keeping global emissions low enough to avoid “dangerous anthropogenic interference with the climate system”
- First Conference of the Parties (COP1) in 1995.
- Kyoto Protocol of 1997 – onus on industrialized countries



2. Global response

Recent UNFCCC

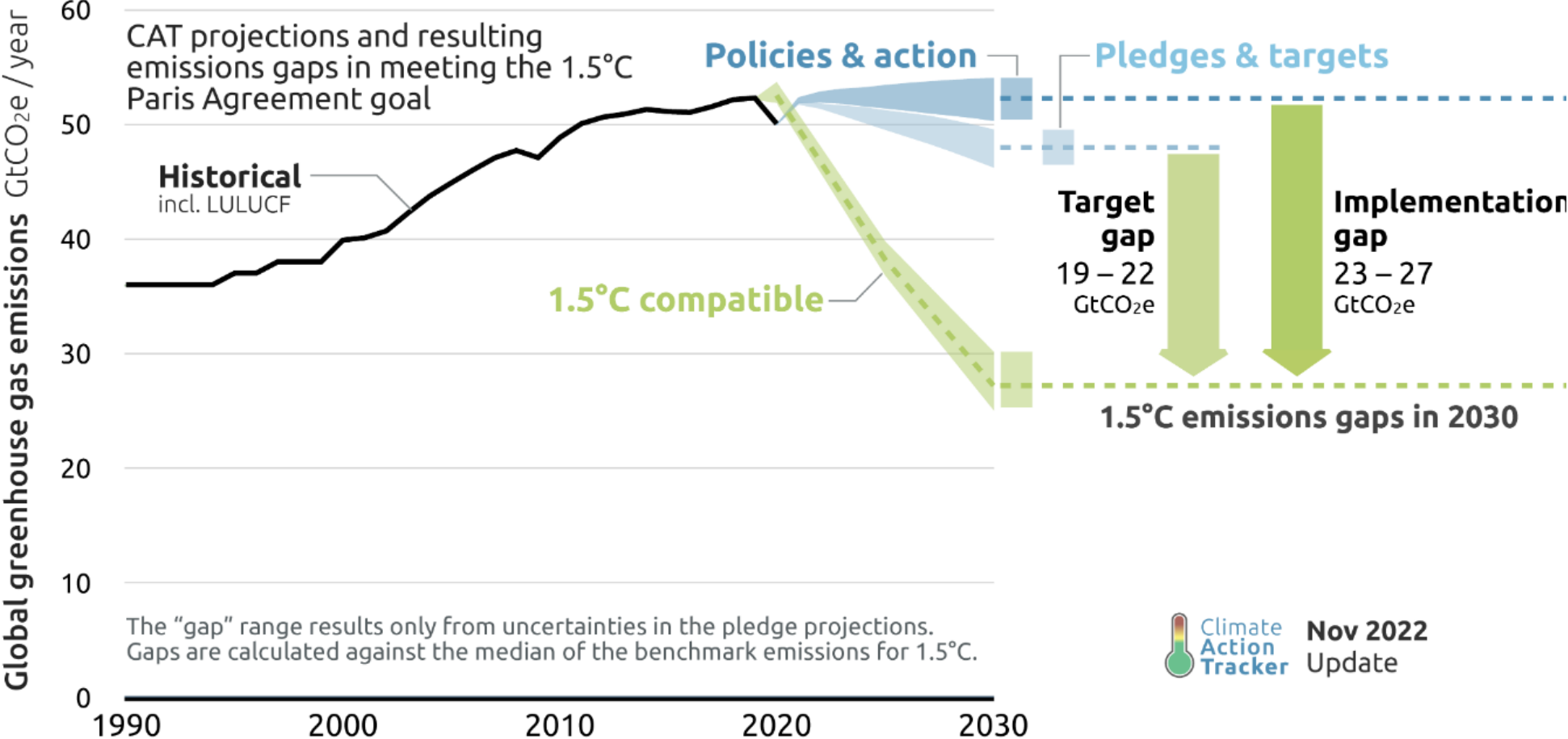
- Paris Agreement of 2015
- *“global ambition” of “holding the increase in global average temperature to well below 2°C above preindustrial levels” and “pursuing efforts” to limit it to 1.5°C*
- Broaden scope to mitigation, adaptation and finance
- Broader inclusion to observers and non-state actors
- Nationally Determined Contribution (NDC) – pledges towards the 1.5°C target.



2. Global response

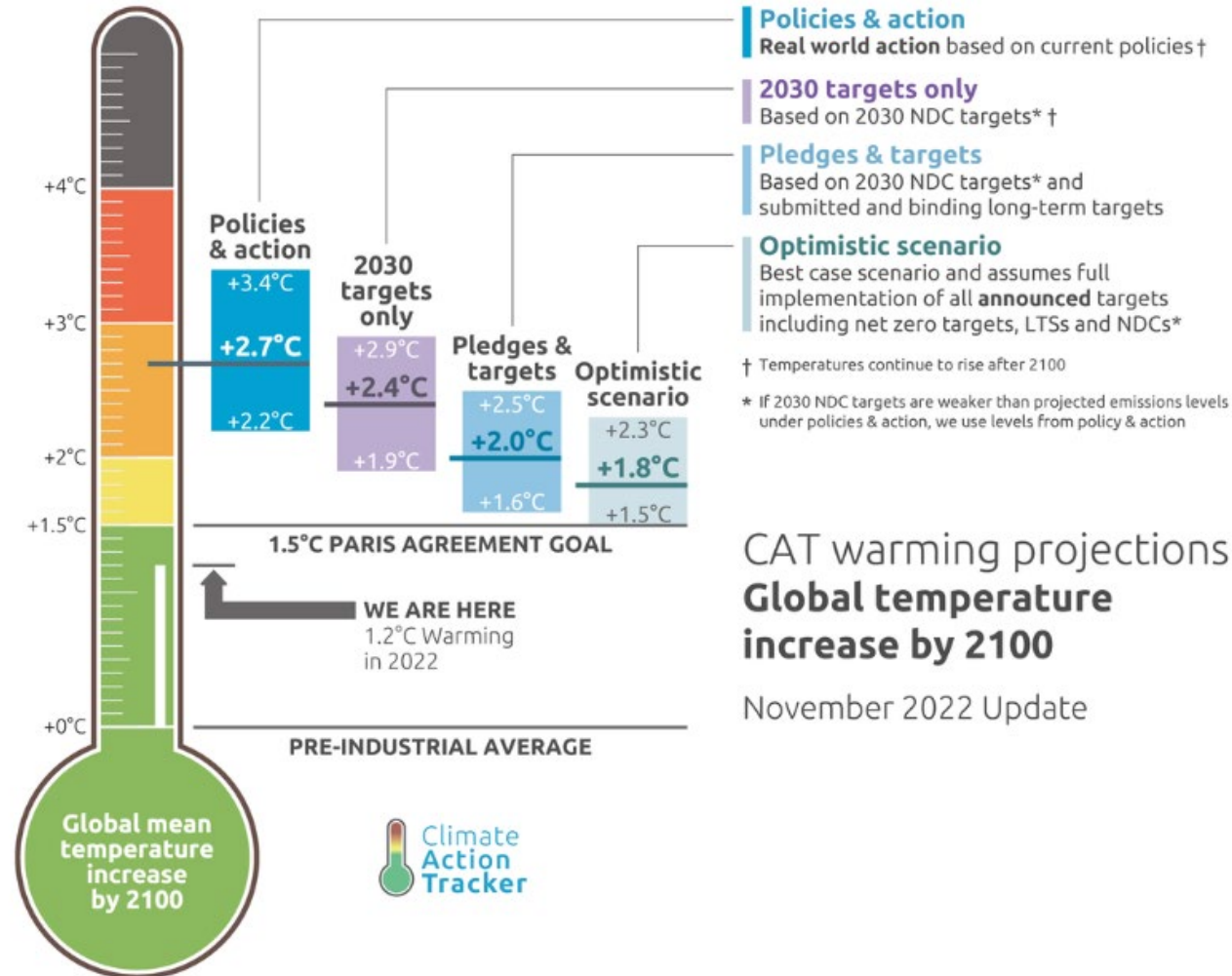
Emission reductions

2030 EMISSIONS GAPS



2. Global response

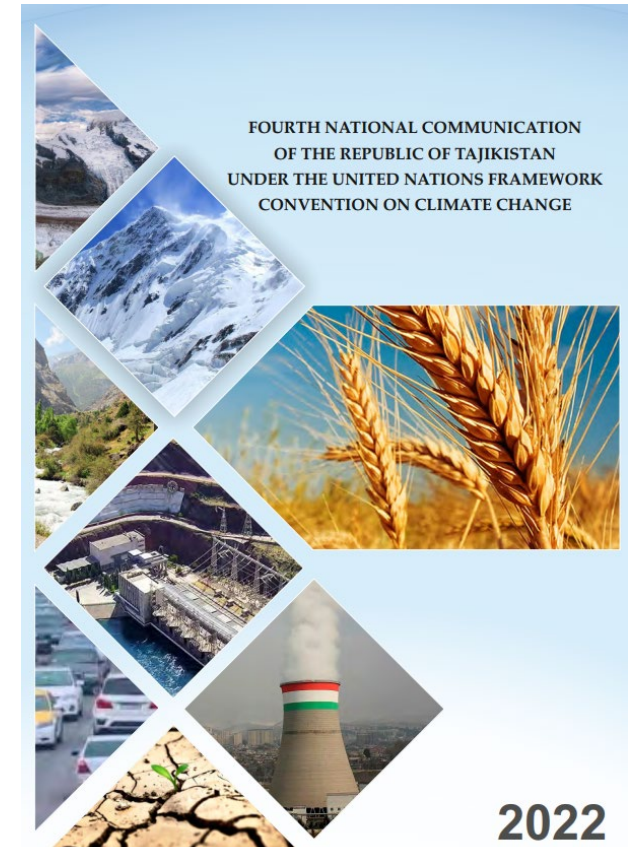
CAT thermometer



3. National response

The National Communication to UNFCCC

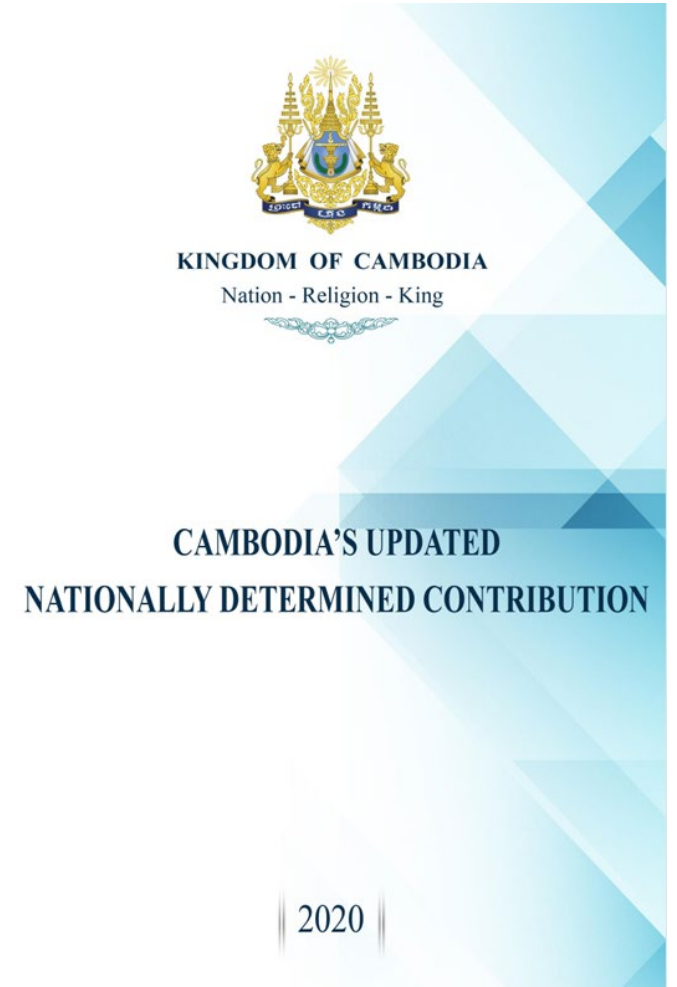
- National Communications to UNFCCC
- Submitted to UNFCCC every 5 years
- Includes national inventory of emissions, steps taken, other relevant information (e.g., technology transfer, capacity)



3. National response

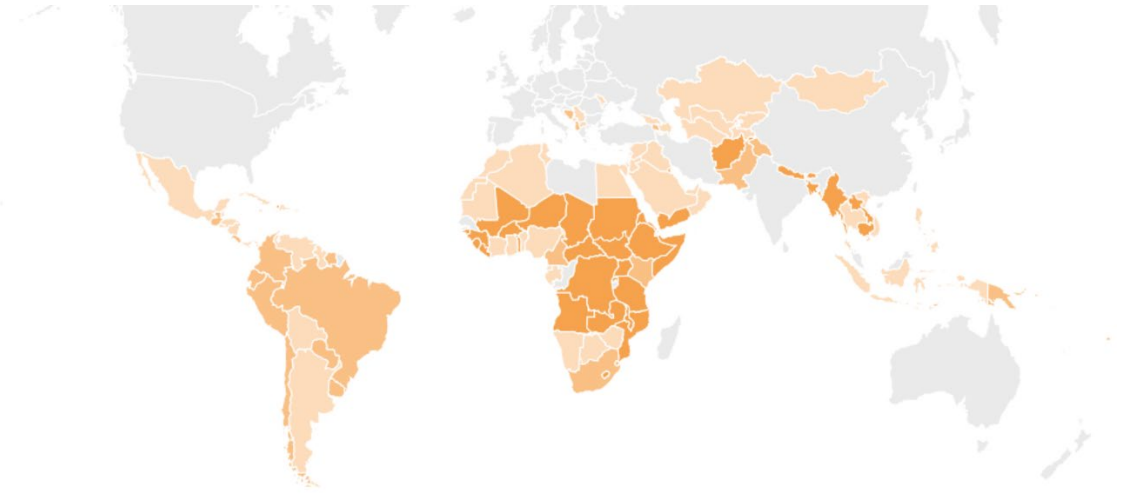
Nationally Determined Contribution (NDC)

- NDC every 5 years following Paris 2015
- Outlines emissions scenario and targets (to 2030)
- May outline adaptation actions
- Identifies conditional and unconditional financial needs.
- New NDC (3.0) for submission in February 2025 for COP30.
- NDCs public registry maintained by the secretaria (Art. 4-12 of the Paris Agreement):
<https://unfccc.int/NDCREG>



3. National response

- NAP – National Adaptation Plan (and NAPA)
- NAMA - Nationally Appropriate Mitigation Action (Bali Action Plan of 2007)
- Climate and DRR policies – JNAPs
- Climate Acts
- GCF Country Programme
- National Development / Spatial plans
- Sector-based plans



CLIMATE CHANGE ACT 2021



AN ACT TO ESTABLISH A COMPREHENSIVE RESPONSE TO CLIMATE CHANGE, TO PROVIDE FOR THE REGULATION AND GOVERNANCE OF THE NATIONAL RESPONSE TO CLIMATE CHANGE, TO INTRODUCE A SYSTEM FOR THE MEASUREMENT, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSIONS AND FOR RELATED MATTERS

PART 1 PRELIMINARY [ss 1–5]

4. Climate finance

LANDSCAPE OF CLIMATE FINANCE IN 2021/2022

Global climate finance flows along their life cycle in 2021 and 2022. Values are averages of two years' data to smooth out fluctuations, in USD billions.



SOURCES AND INTERMEDIARIES

Which type of organizations are sources or intermediaries of capital for climate finance?

INSTRUMENTS

What mix of financial instruments is used?

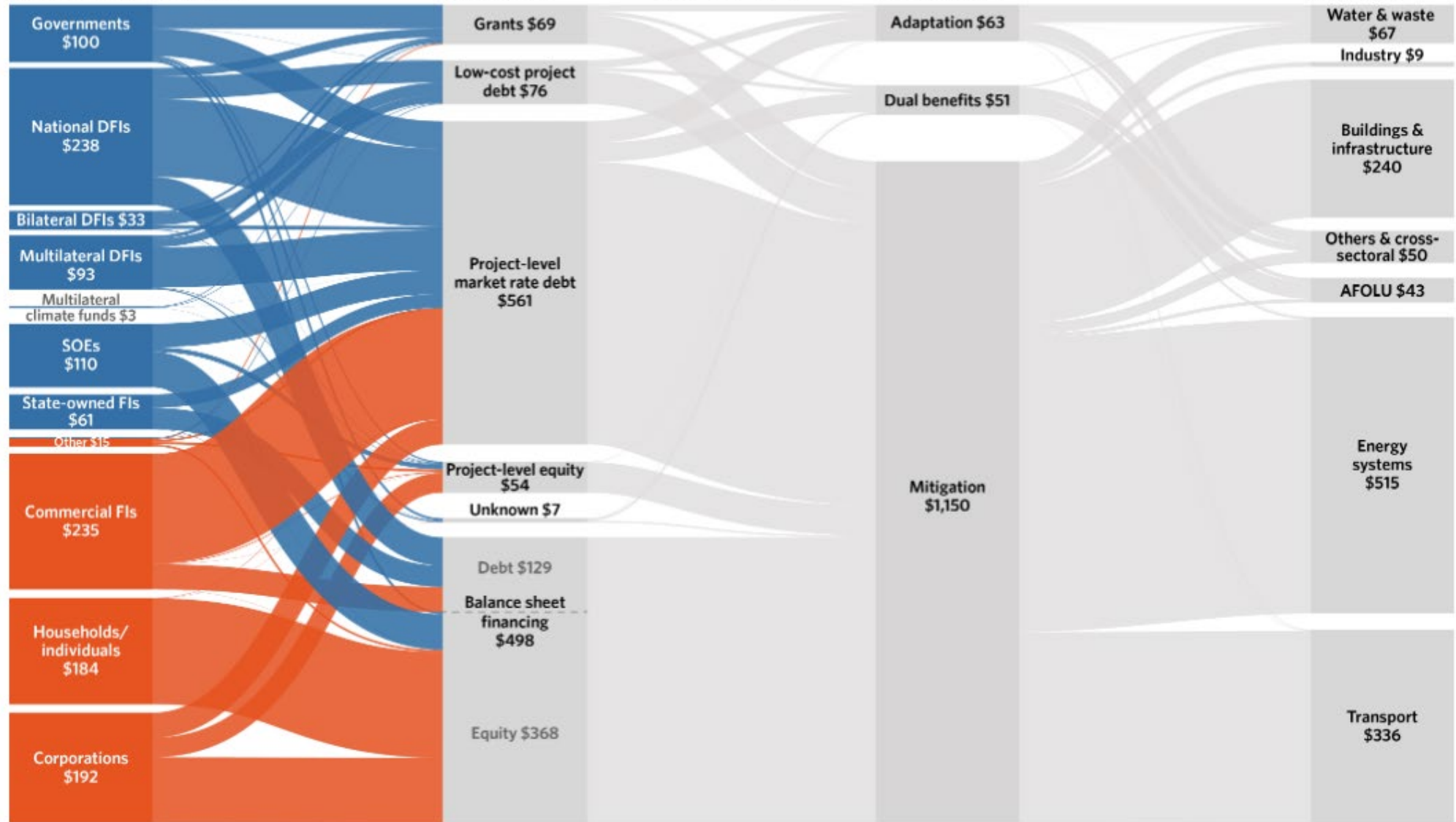
1.27 TRILLION USD ANNUAL AVERAGE

USES

What types of activities are financed?

SECTORS

What is the finance used for?



Public Private

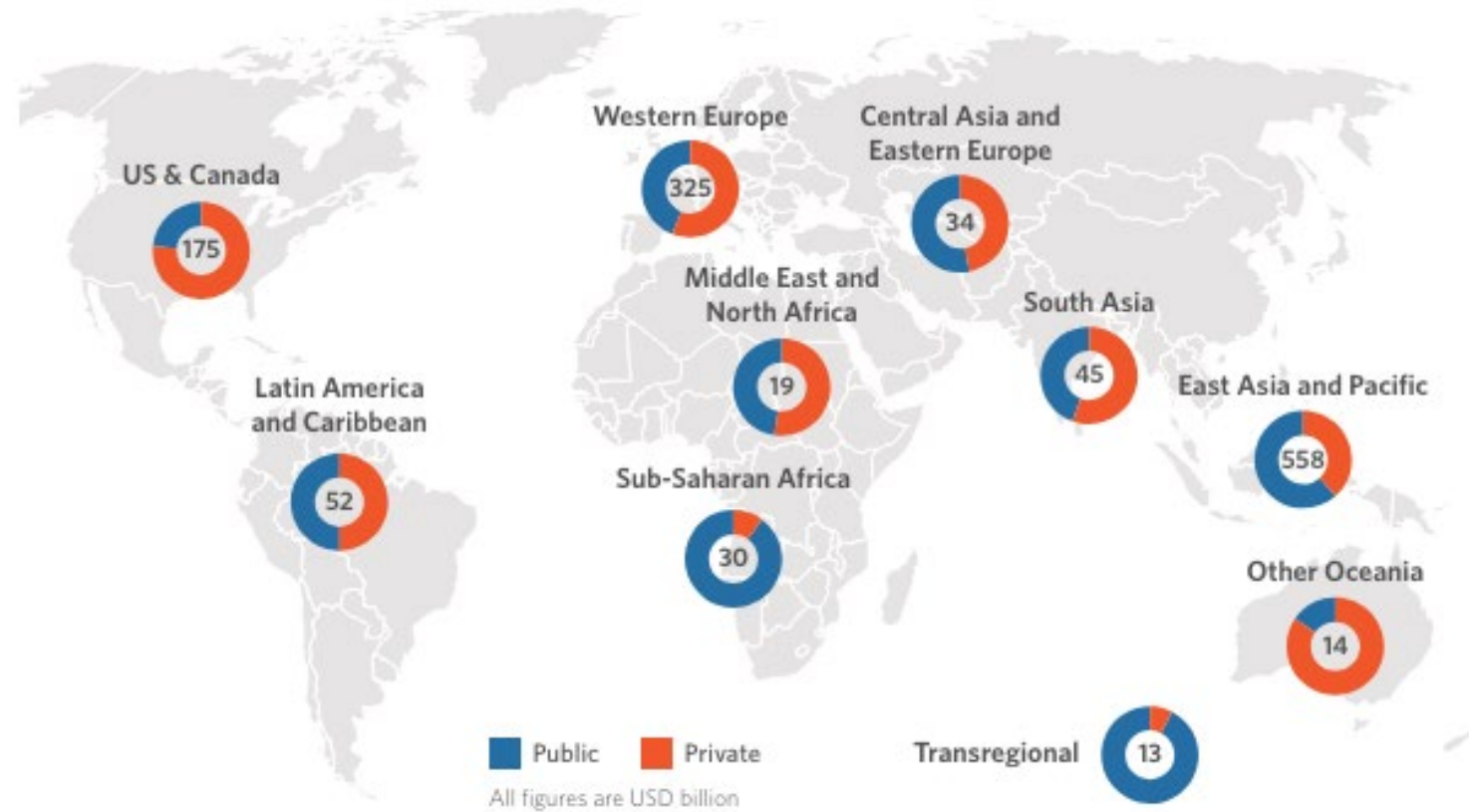
"Other" public sources include export credit agencies and unknown public funds

"Other" private sources include institutional investors, funds, and unknown

Source: Climate Policy Initiative

4. Climate finance

Figure ES5: Public vs. private climate finance by region



Summary

1. The IPCC provides global synthesis of climate projections and impacts.
2. The UNFCCC provides the auspices for coordinated global climate action.
3. The NDC provides a national climate plan, consistent and supported by other national policies.
4. Climate response routes are (i) mitigation to reduce emissions, and (ii) adaptation to build resilience to climate impacts.
5. Climate finance flows through many channels and includes private sector and innovative financing mechanisms.



Thank you!

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