

# Key findings on mitigation from the IPCC AR6 Synthesis Report

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# **The Synthesis Report Narrative**

**Current Status and Trends**

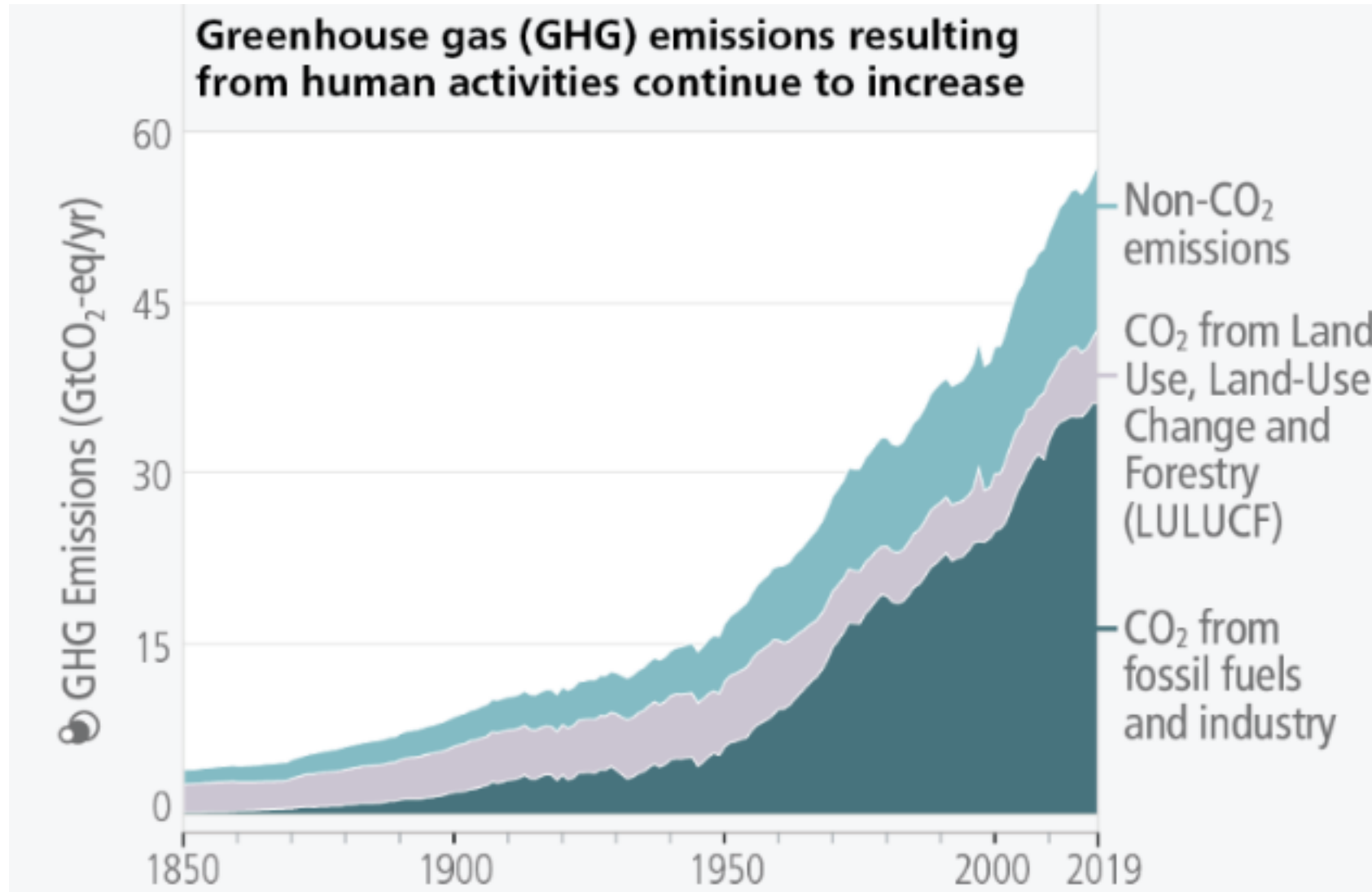
**Long-Term Climate and Development Futures**

**Near-Term Responses in a Changing Climate**

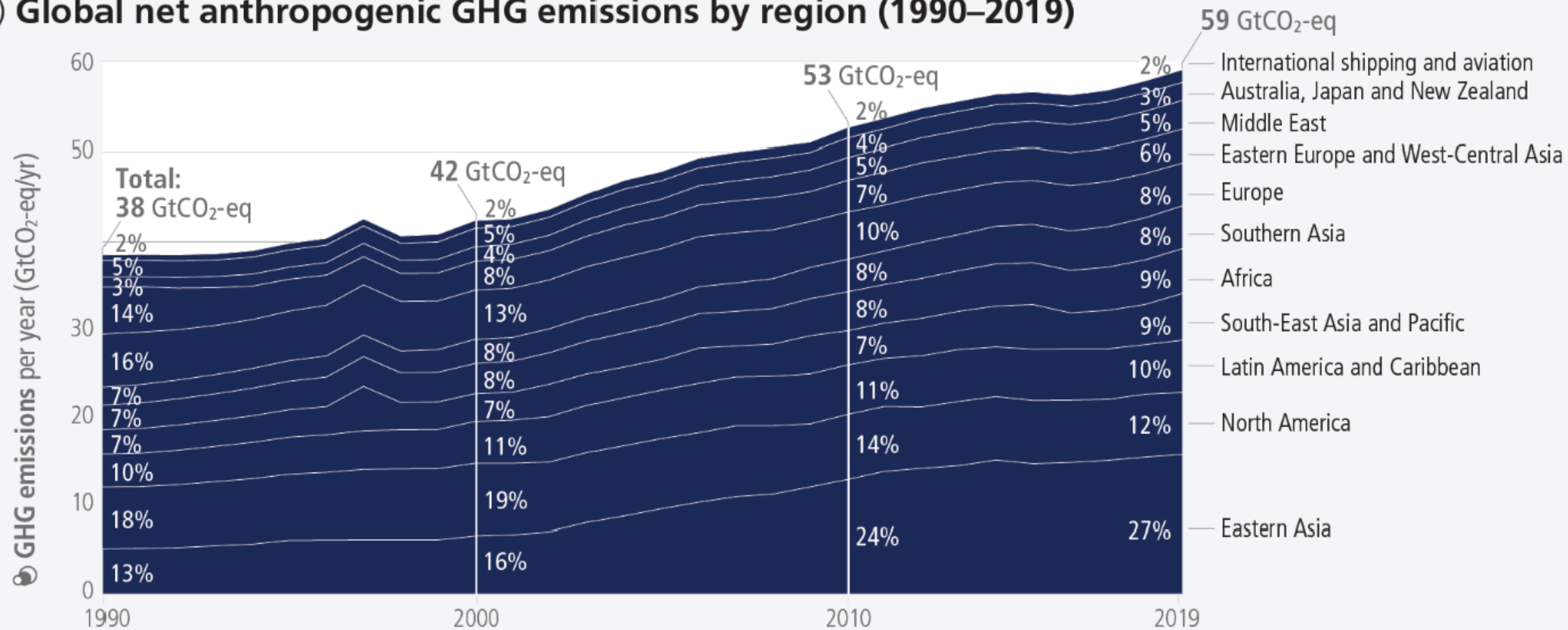
+ Plans and challenges for AR7

+ IPCC Workshop on the use of scenarios in AR6  
and subsequent assessments

# Current Status and Trends

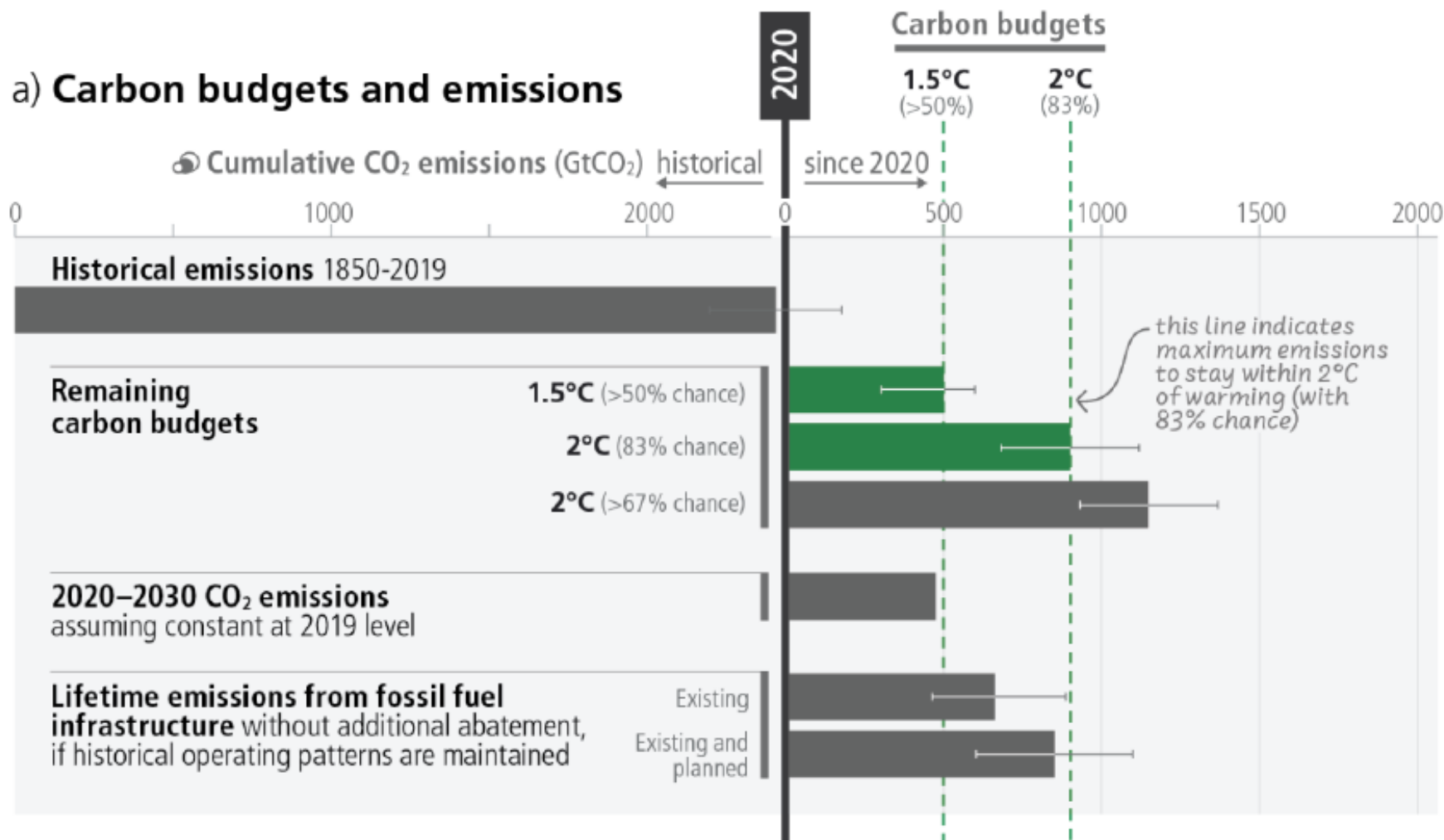


**c) Global net anthropogenic GHG emissions by region (1990–2019)**

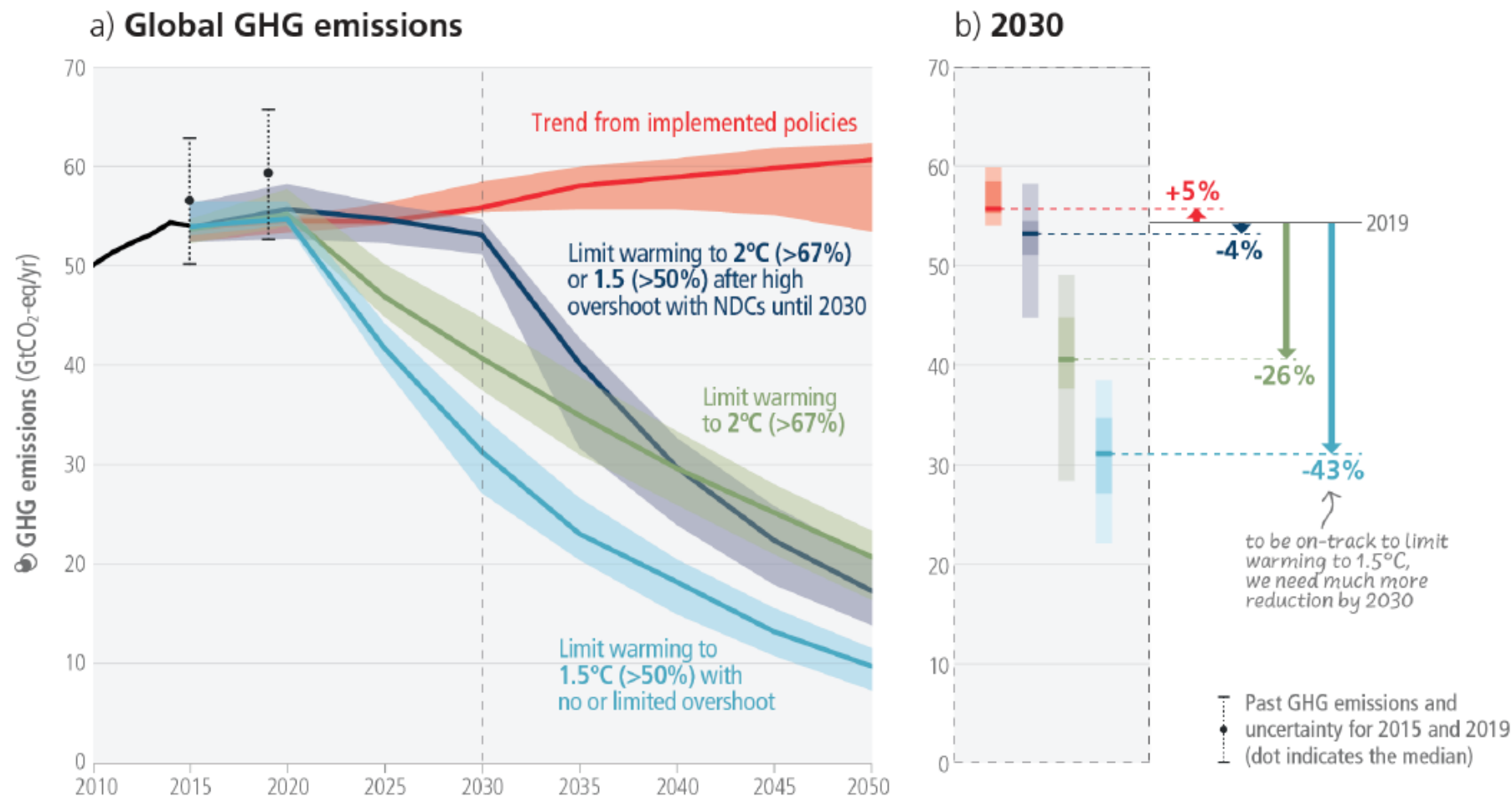


GHG

# Remaining carbon budgets to limit warming to 1.5°C could soon be exhausted, and those for 2°C largely depleted

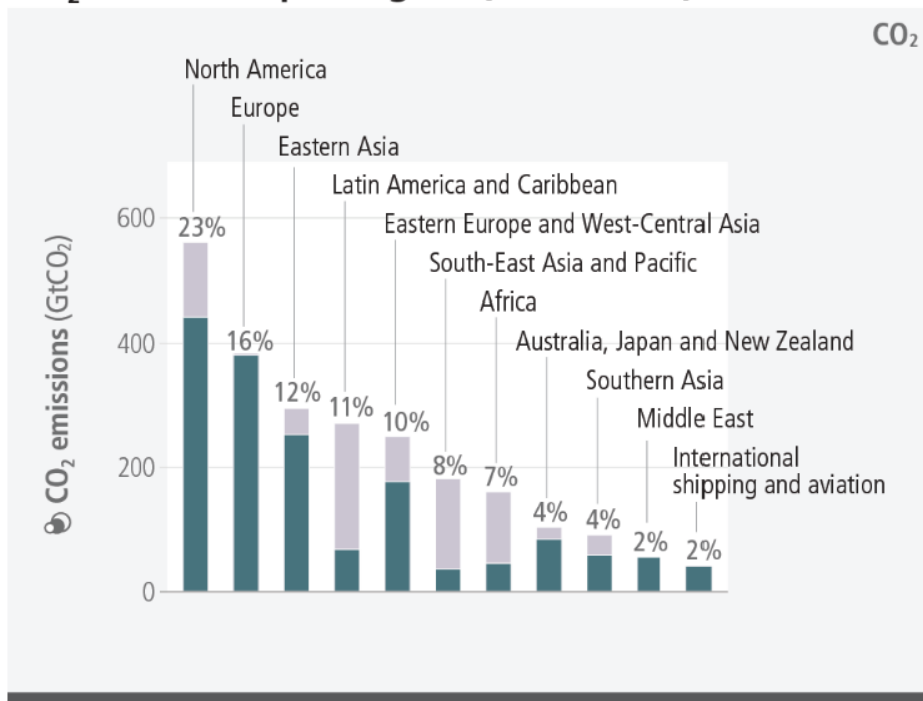


# Projected global emissions from NDCs make it likely that warming will exceed 1.5°C

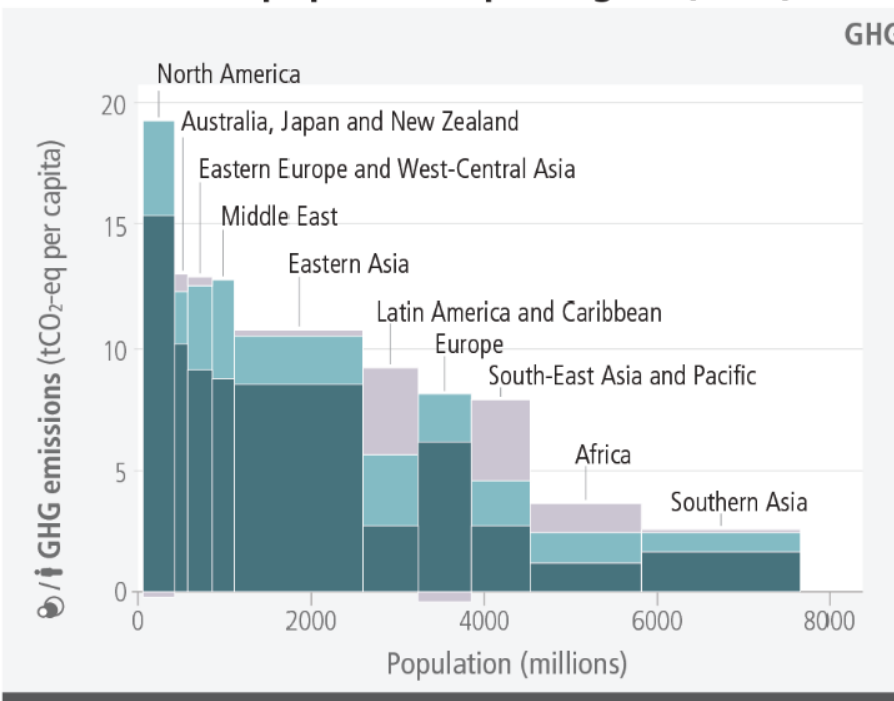


# Emissions are distributed unevenly, both in the present day and cumulatively since 1850

a) Historical cumulative net anthropogenic CO<sub>2</sub> emissions per region (1850–2019)



b) Net anthropogenic GHG emissions per capita and for total population, per region (2019)



Key

Timeframes represented in these graphs

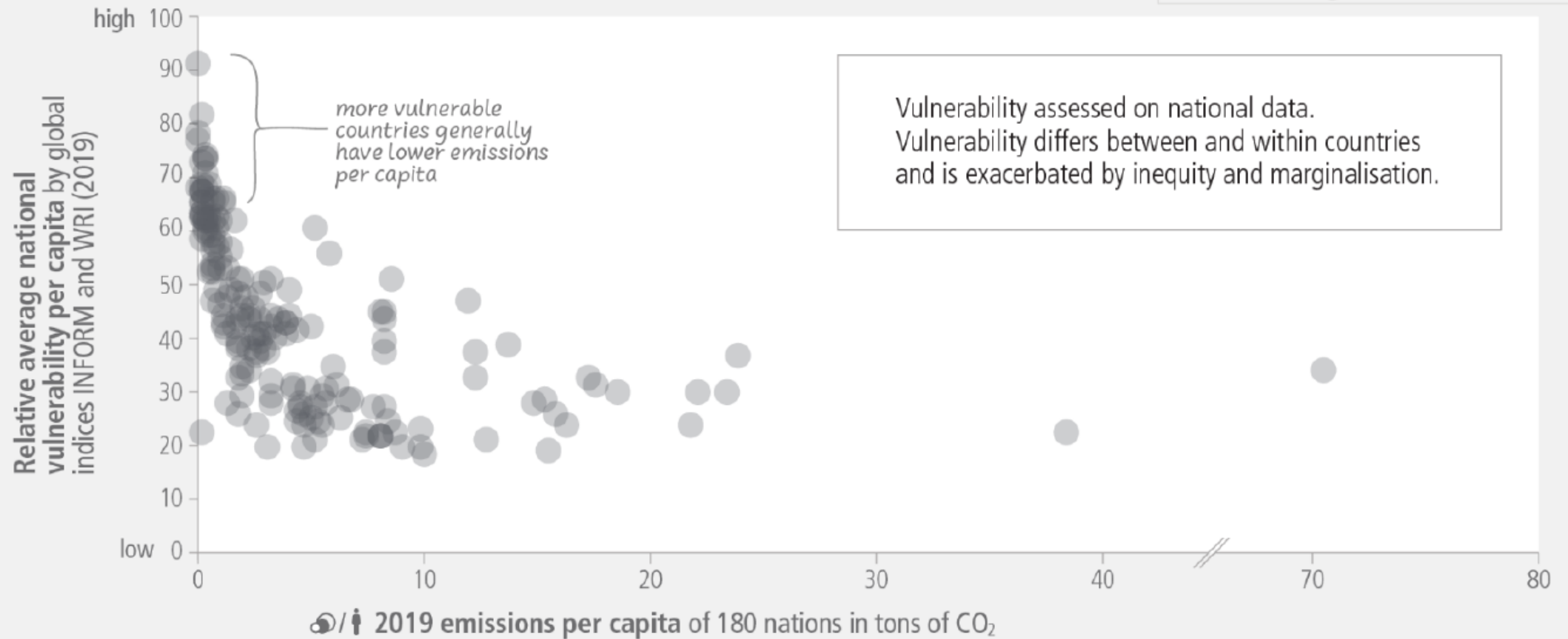
- Net CO<sub>2</sub> from land use, land use change, forestry (CO<sub>2</sub>LULUCF)
- Other GHG emissions
- Fossil fuel and industry (CO<sub>2</sub>FFI)
- All GHG emissions



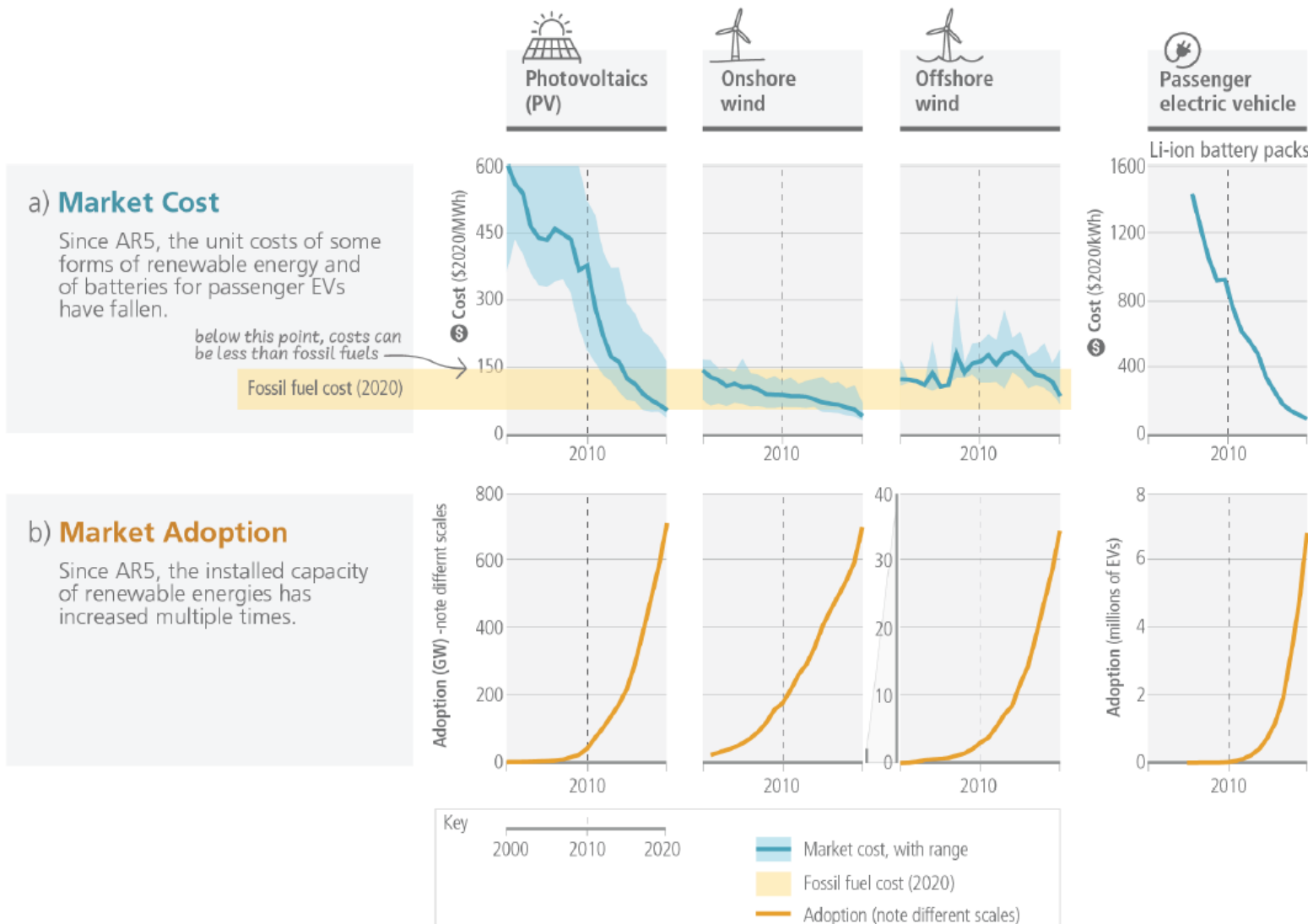
# Those who have generally contributed least to climate change are most vulnerable

b) Vulnerability of population & per capita emissions per country in 2019

Dimension of Risk:  Vulnerability

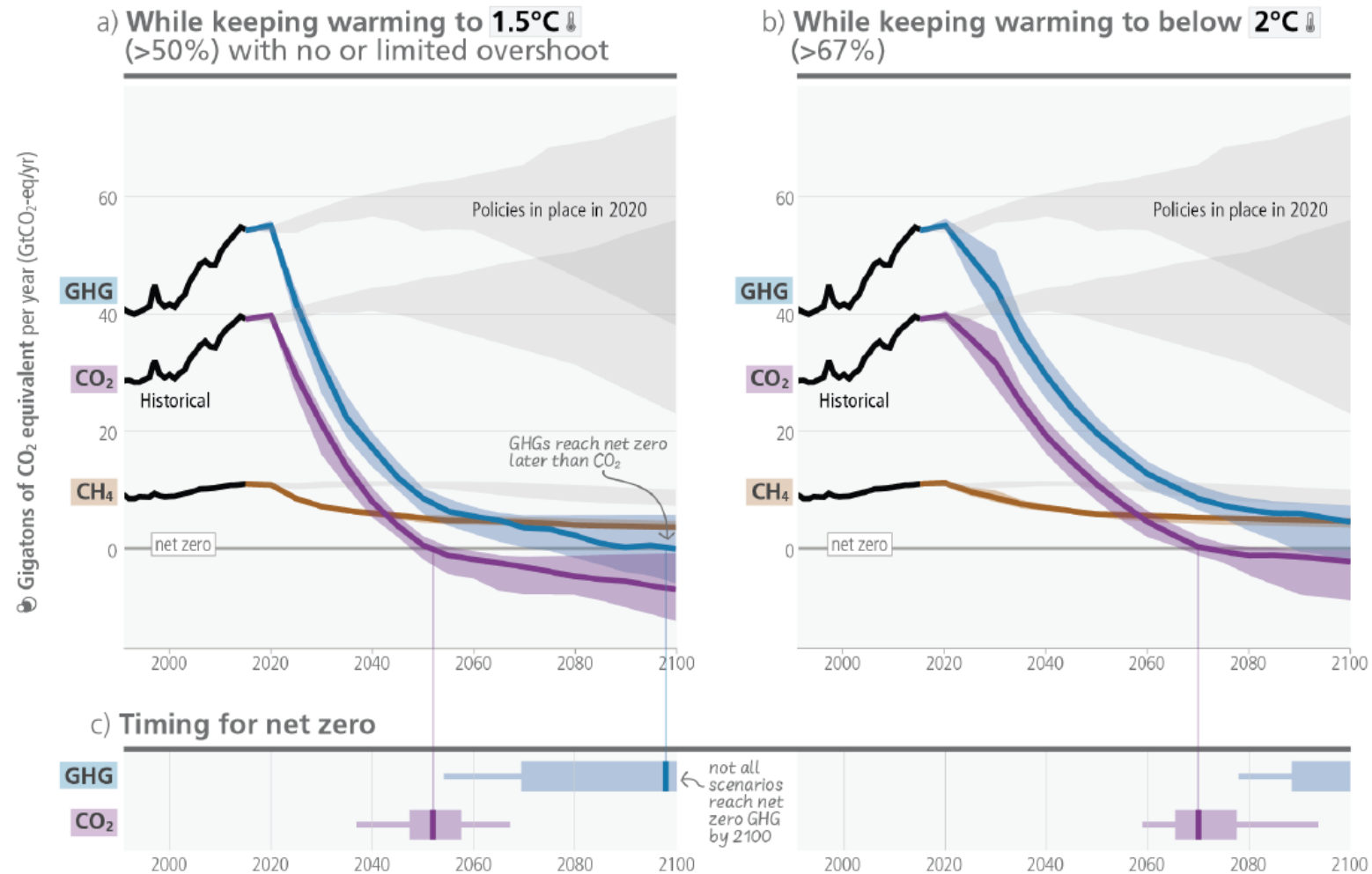


# Renewable electricity generation is increasingly price-competitive and some sectors are electrifying



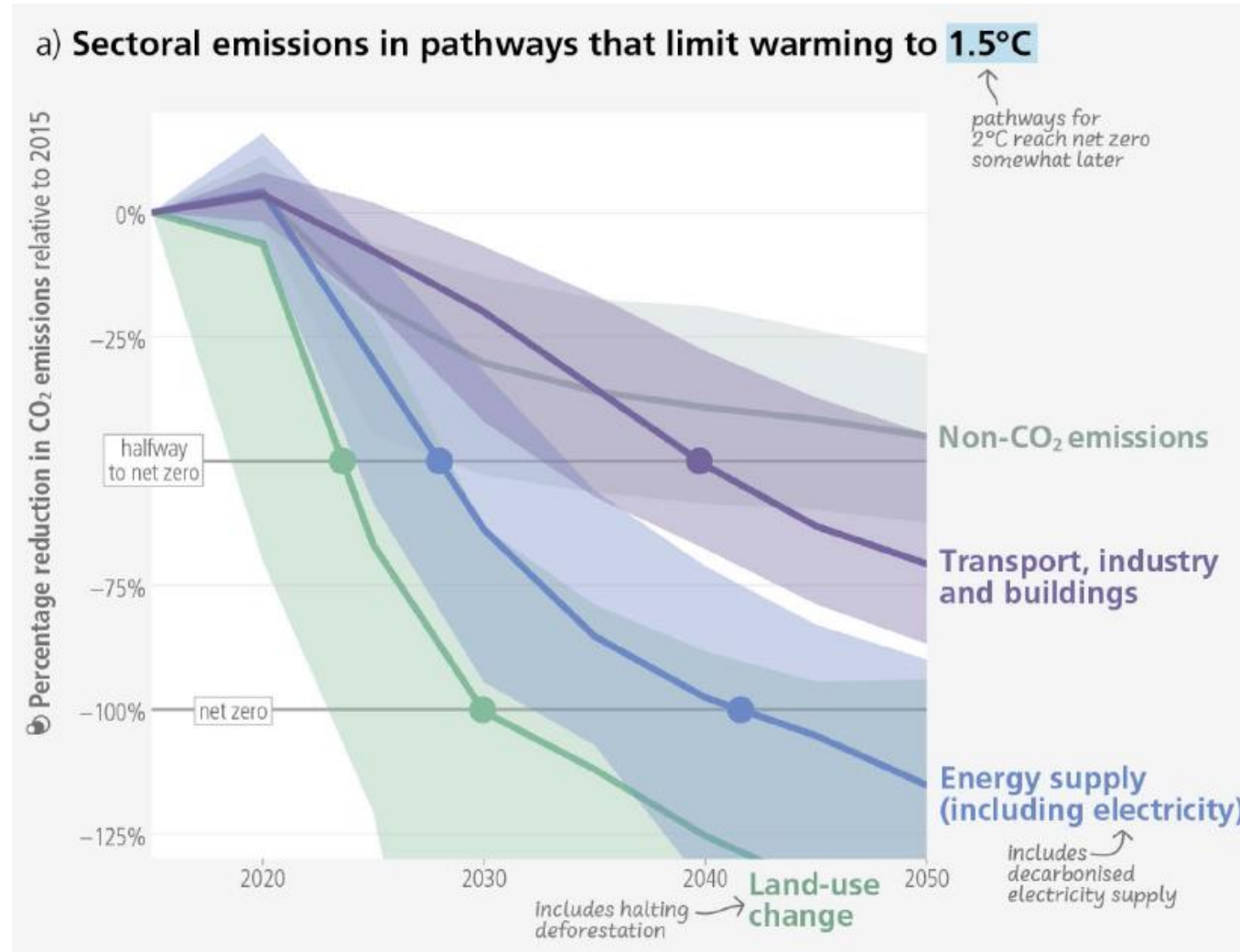
# **Long-Term Climate and Development Futures**

# Global modelled pathways that limit warming to 1.5°C reach net zero CO<sub>2</sub> emissions around 2050



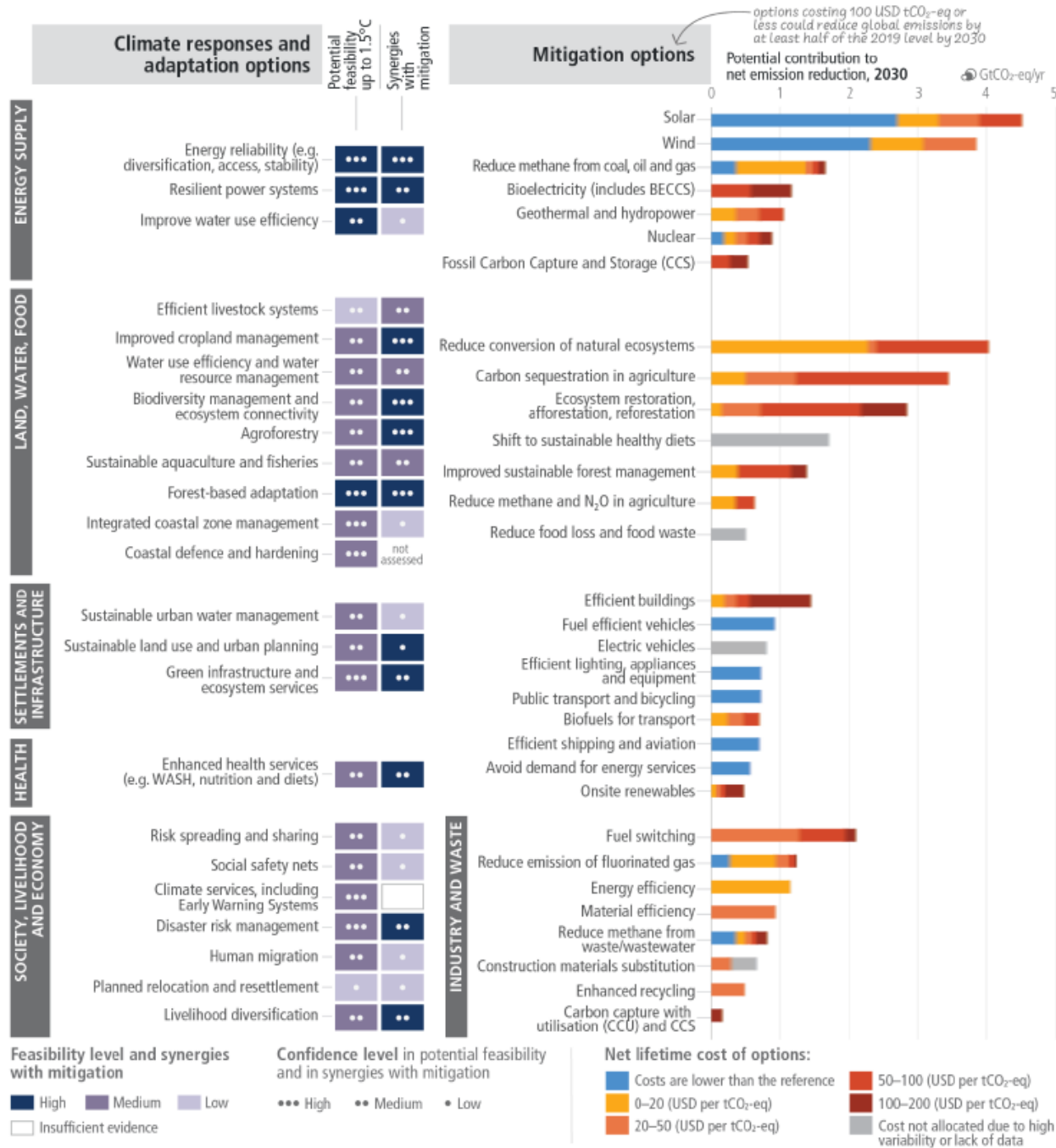


# The transition towards net zero CO<sub>2</sub> will have different pace across different sectors

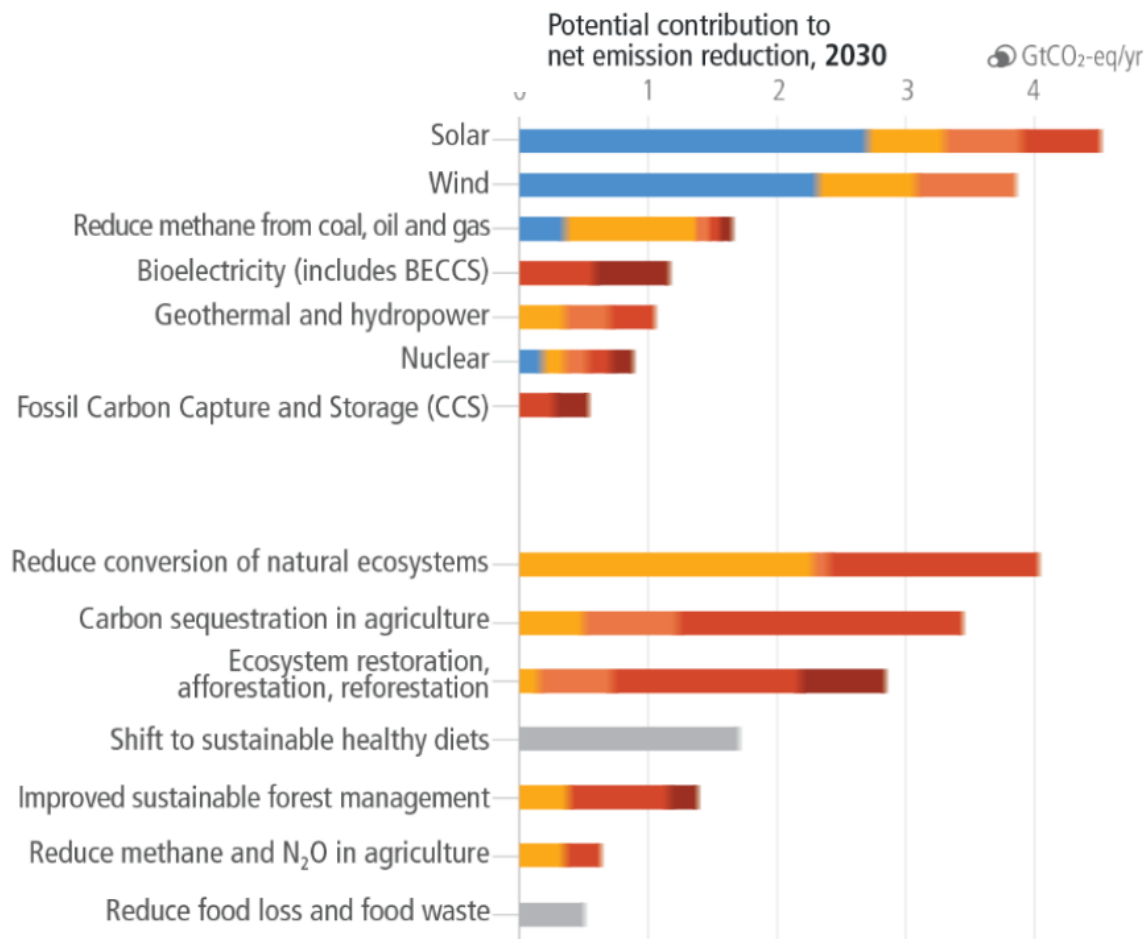


# **Near-Term Responses in a Changing Climate**

# There are multiple opportunities for scaling up climate action in the near term



# Energy and AFOLU

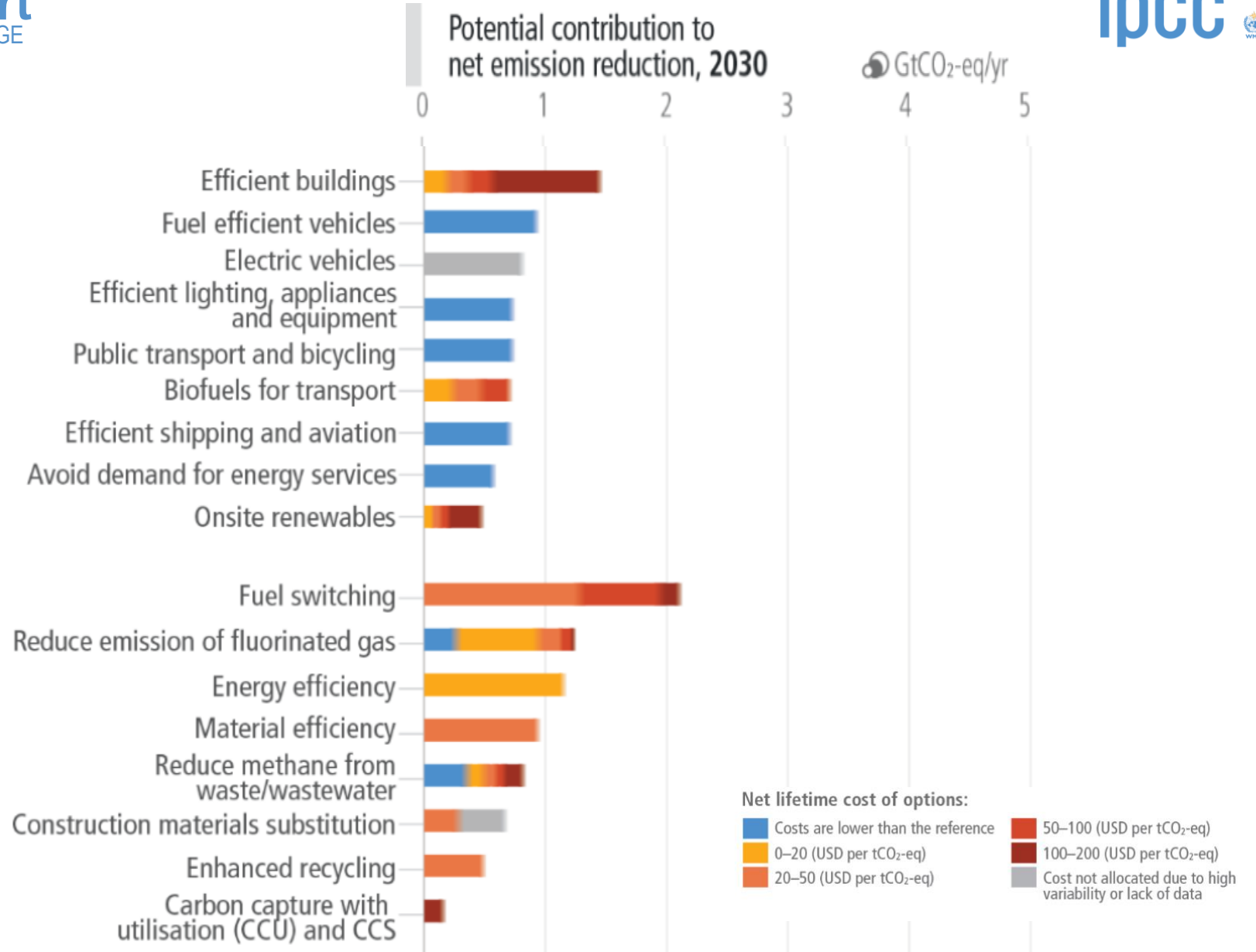


**Net lifetime cost of options:**

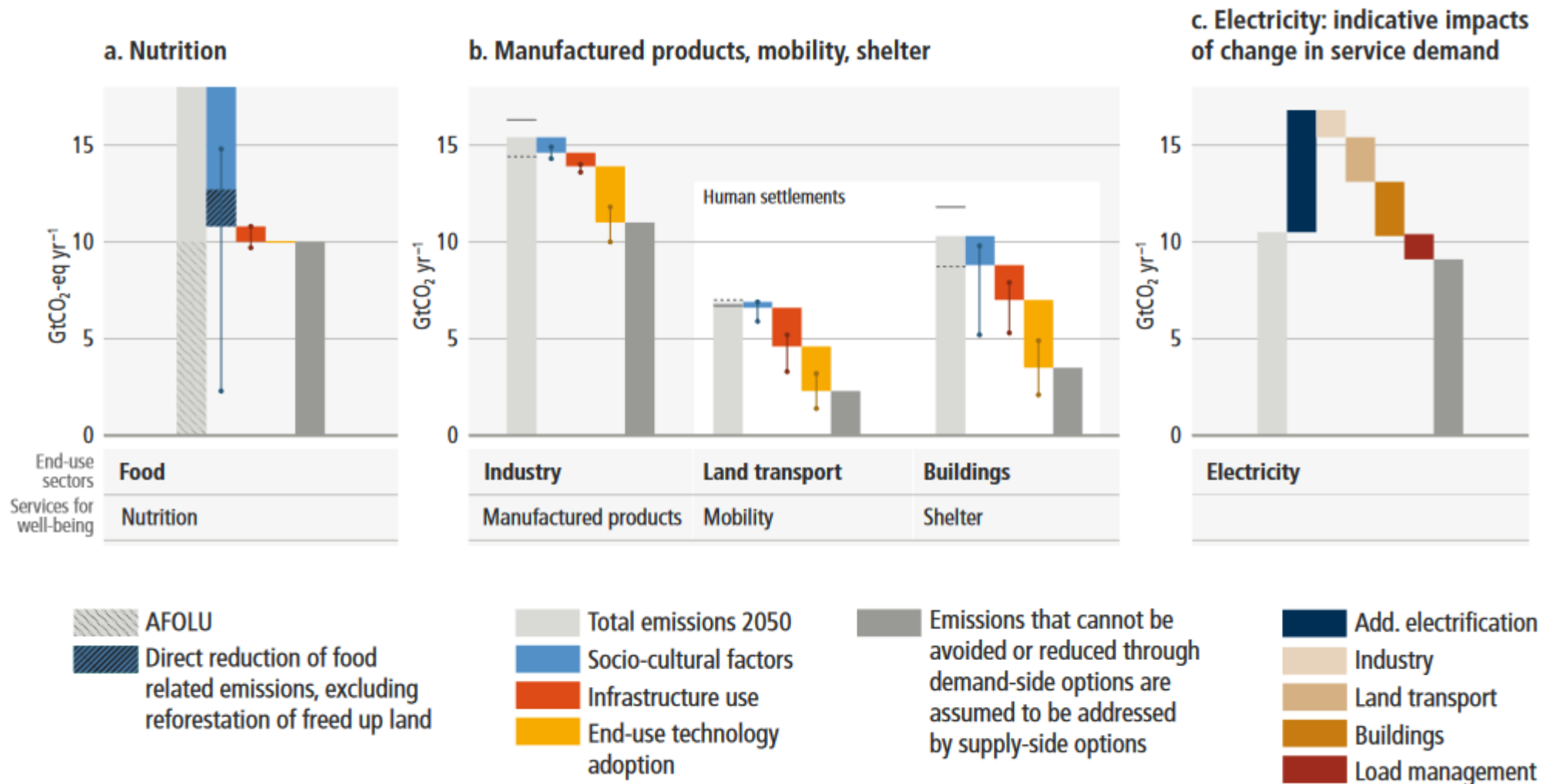




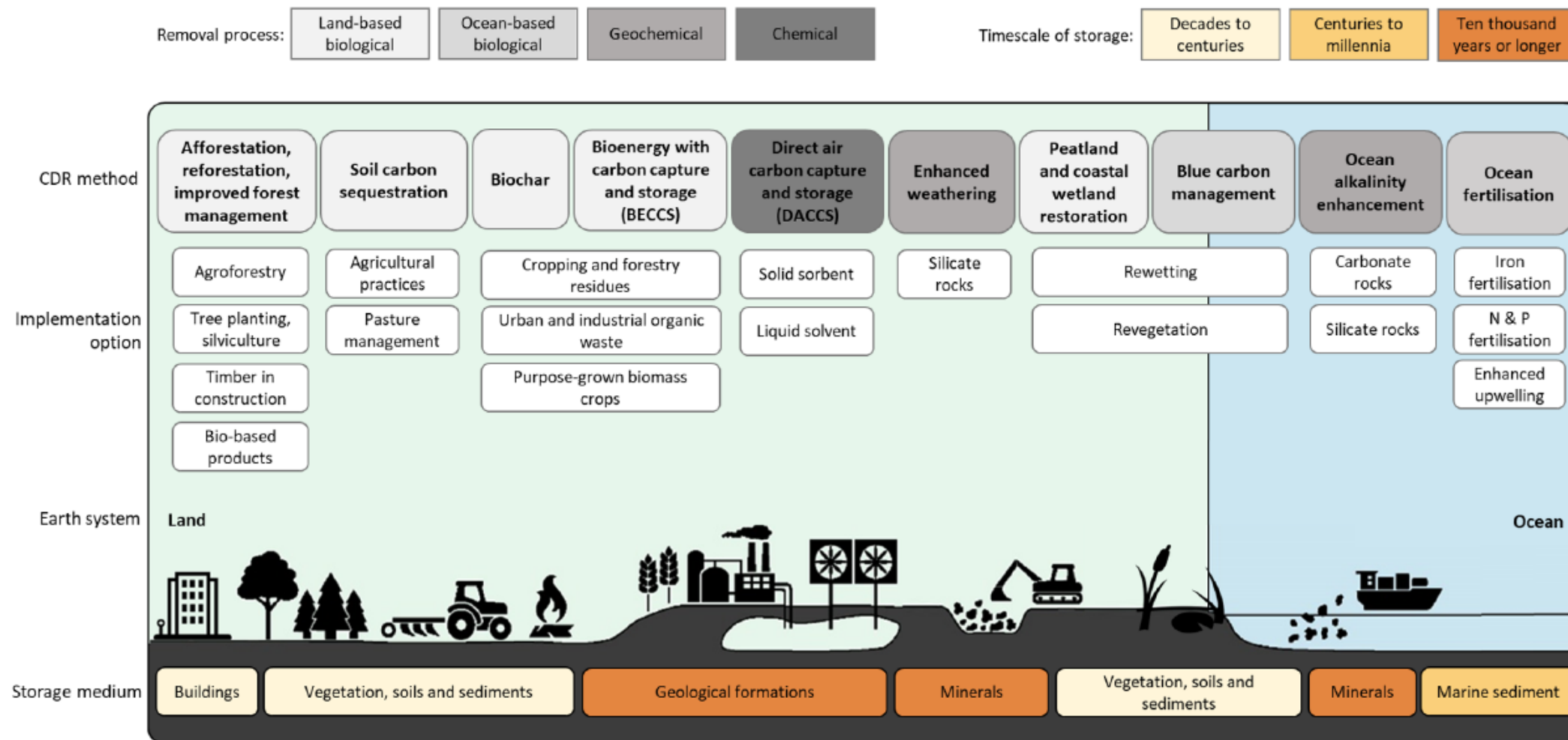
# Demand sectors



# The range of demand-side GHG emission reduction potential by 2050 is 40-70% in end-use sectors



# Carbon Dioxide Removal: Can counterbalance hard-to-eliminate emissions

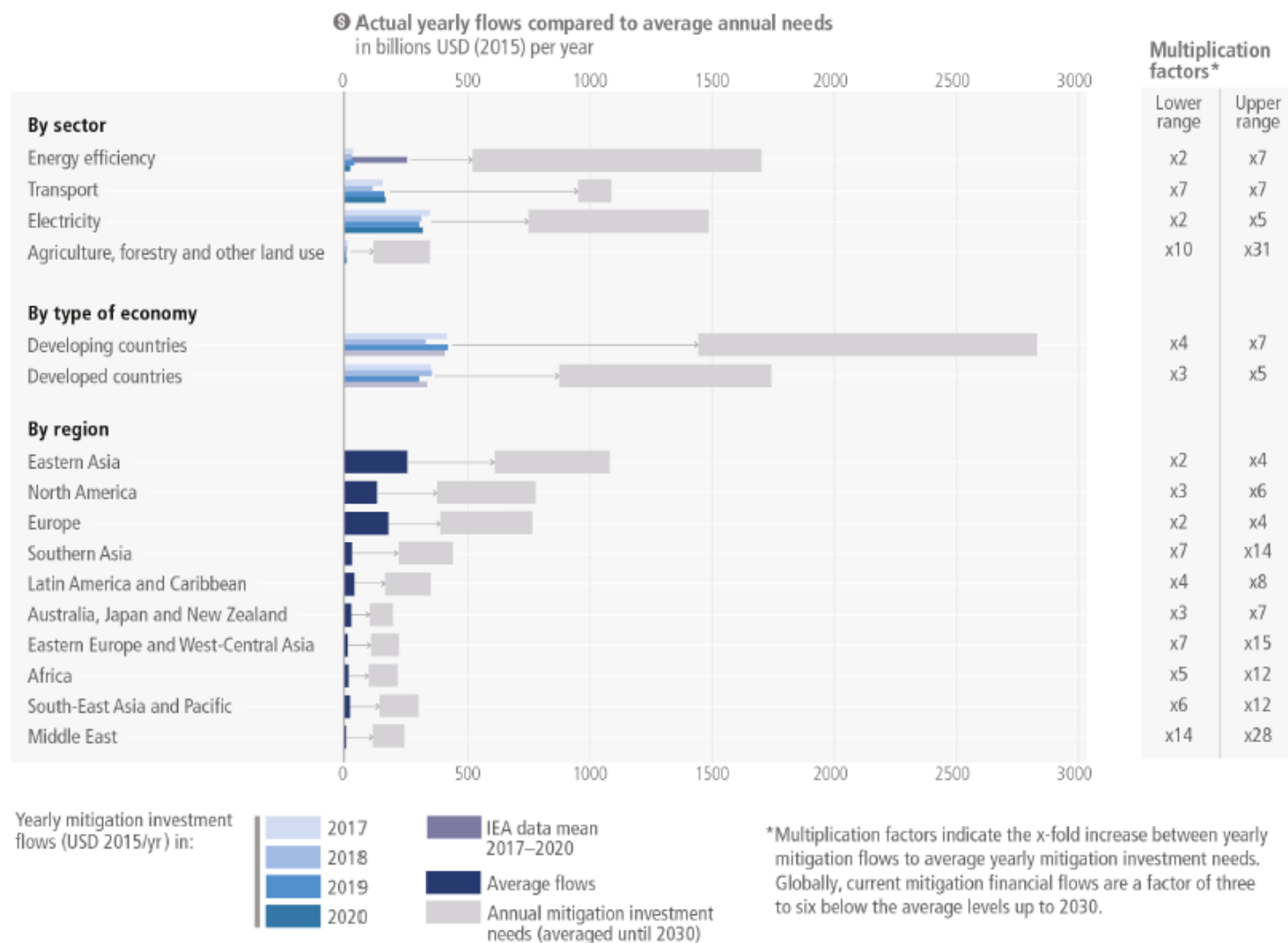


# Near term adaptation and mitigation options have more synergies than trade-offs with Sustainable Development Goals





# Higher mitigation investment flows required for all sectors and regions to limit global warming



# Plans and challenges for AR7

## Plans for the IPCC 7<sup>th</sup> Cycle

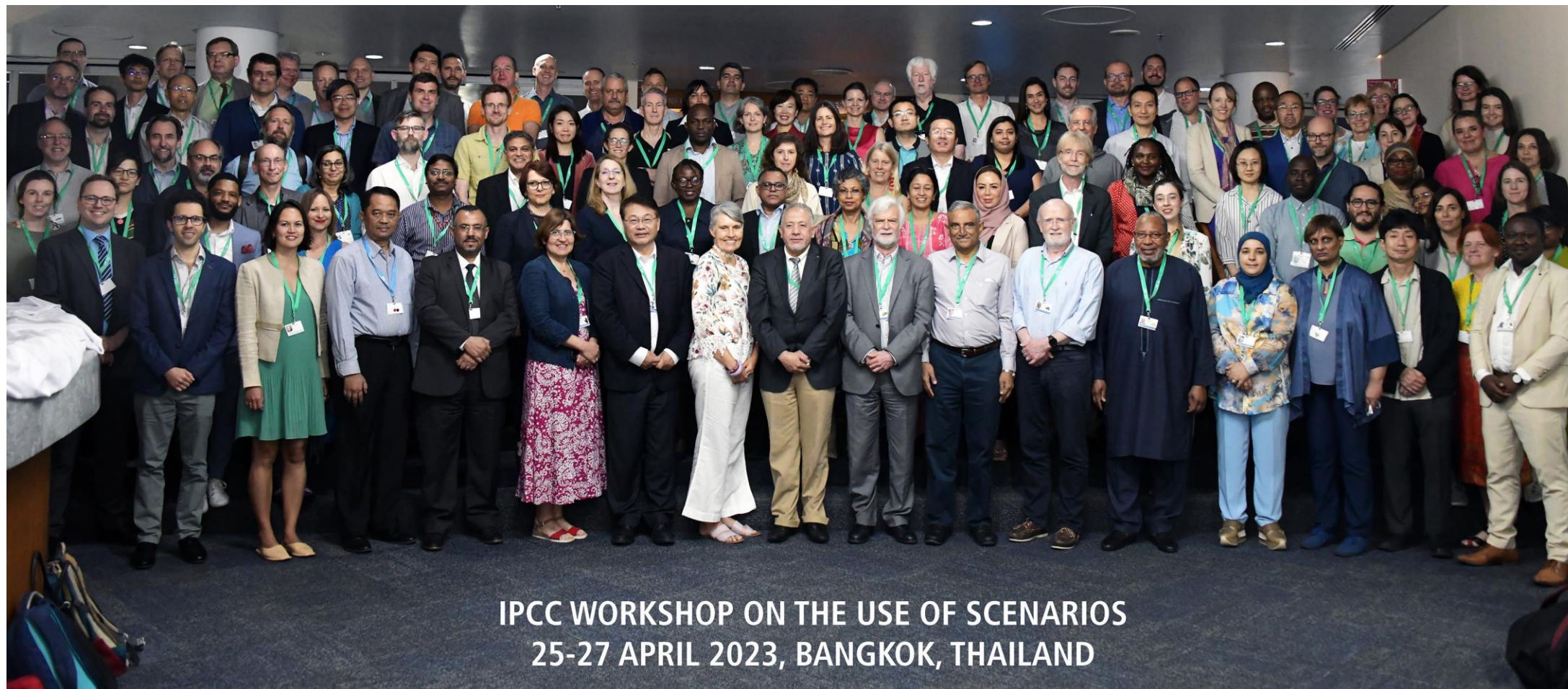
- Elections in July 2023
- The cycle will last 5-7 years
- The Bureau structure is essentially unchanged – 34 places, three Working Groups, regional quotas
- Further plenary before COP 28 to address plans for the 7<sup>th</sup> cycle
- There is already a commitment to a Special Report on Cities
- Links between the IPCC and UNFCCC cycles an issue (2<sup>nd</sup> Global Stocktake 2028)
- Little prospect of three traditional Working Group reports or a Synthesis Report by 2028

# Scientific Challenges for the IPCC 7<sup>th</sup> Cycle (personal view)

- Attribution – can specific climate events be attributed to human influence (WG I)
- Understanding overshoot and the reduction of warming levels (all WGs)
- Further focus on carbon dioxide removal (CDR) (all WGs)
- Focus on implementation and actions in the near-term – barriers, enablers, feasibility (WGs II and III)
- Just transition (social and economic impacts of implementation) (WGs II and III)
- Issues round Article 6 of the Paris Agreement - Market and Non-Market Mechanisms (WG III)
- Border carbon adjustments (WG III)



# IPCC Workshop on the Use of Scenarios in AR6 and Subsequent Assessments



# **Topics relevant for the scientific community involved in modelling**

1. Update and improve community scenario framework
2. Individual research projects and other MIPs
3. Regional and temporal resolution
4. Inclusivity
5. Assessment of scenarios
6. Integrated assessment models and modelling (IAM)
7. Impacts, adaptation and vulnerability (IAV) communities
8. Overshoot consideration
9. Scenario Database

# **Recommendations/conclusions for scientific communities not involved in modelling**

1. Encourage plurality of scenario development approaches for mitigation and adaptation, including both modelled and non-modelled
2. Develop methods, information, and data for scenario assessment and classification of local-level [bottom-up + non-modelling] scenarios to gain complementary insights to quantified scenarios
3. Promote more diverse representation and inclusion in scenario, climate modelling and IAV development and use
4. Help scenario efforts with developing a richer and more diverse set of narratives and drivers
5. Data baselines production to complement literature gaps in sectors, regions and local level



# Recommendations for research funders

- 1. Participation/representation:** increase the richness and the diversity of views in models and scenarios by engaging a wider variety of researchers from around the world throughout the research cycle (conceptualisation, implementation, dissemination).
- 2. Capacity:** direct funding to engage communities not currently/effectively represented in scenario processes
- 3. Infrastructure:** Increasing funding for data curation, including establishing, maintaining, expanding, updating scenario relevant databases and supporting tools
- 4. Science of scenario assessments:** There is a need for targeted funding on the science and methodologies of assessing scenarios: e.g., not simply treating scenario sets as statistical distributions, and combining qualitative and quantitative scenarios

# Recommendations for the IPCC

1. Provide and ensure early planning and guidance
2. Formulate ways of institutionalizing coordination
3. Embedding coordination in each step of the process

# **Recommendations for communication of scenarios**

- 1. Accessible IPCC explainers on scenarios**
- 2. Guidance on Inclusive Co-developed Scenario Elaborations**
- 3. Build and Cultivate a Network of Trusted Intermediaries to Communicate Scenarios**
- 4. Strengthen Institutionalized Science Communication Experts throughout IPCC Process**



***THANK YOU!***