



Mitigation of Climate Change: Taking Stock of Ambitions, Actions and Challenges



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IPCC WGIII Co-Chairs

The role of the IPCC is ...

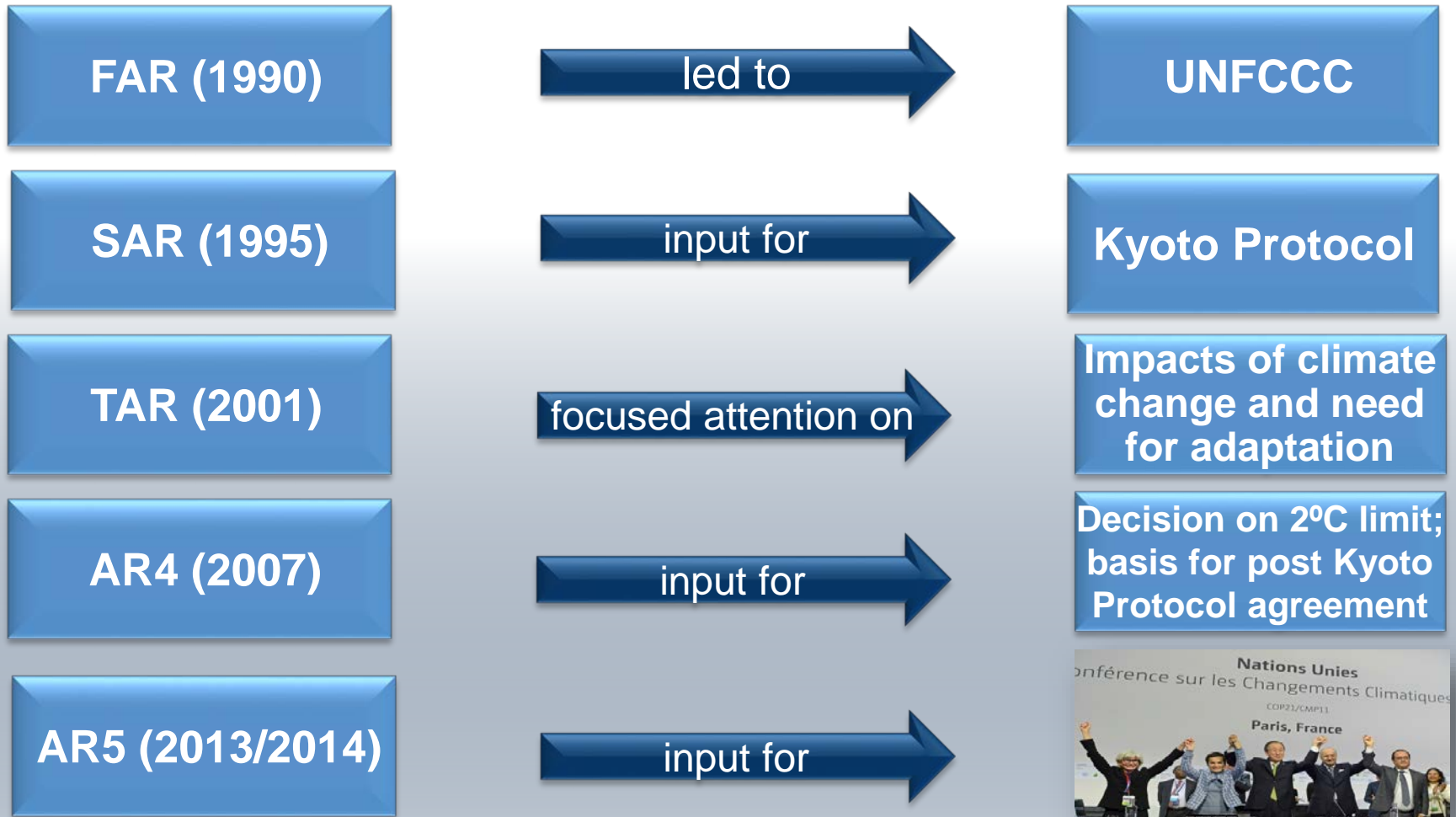
“... to **assess** on a comprehensive, objective, open and transparent basis the **scientific, technical and socio-economic information** relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.”

“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.”

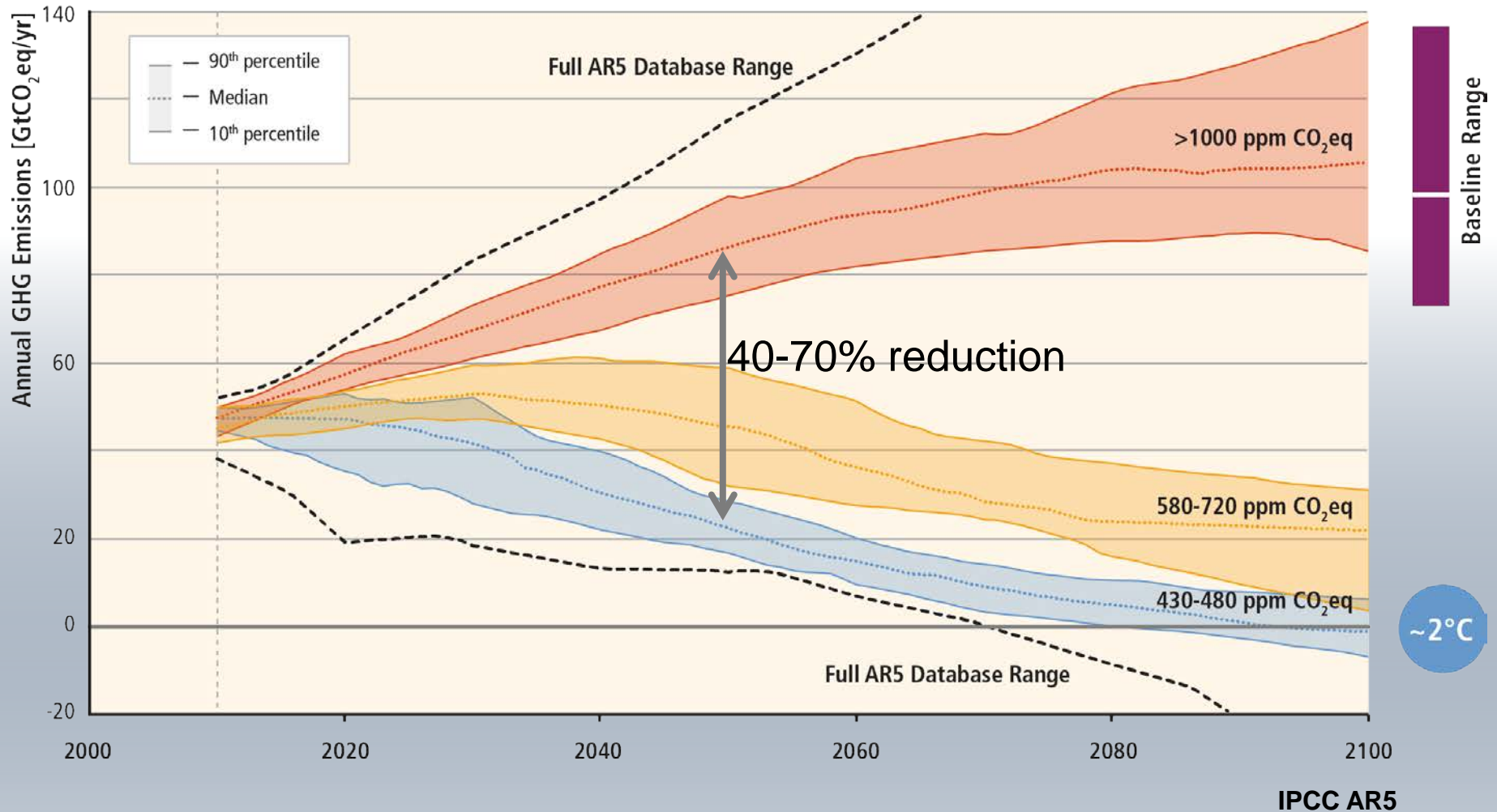
Principles Governing IPCC Work, paragraph 2

Source: <http://www.ipcc.ch/pdf/ipcc-principles/ipcc-principles.pdf>

...that have made an impact



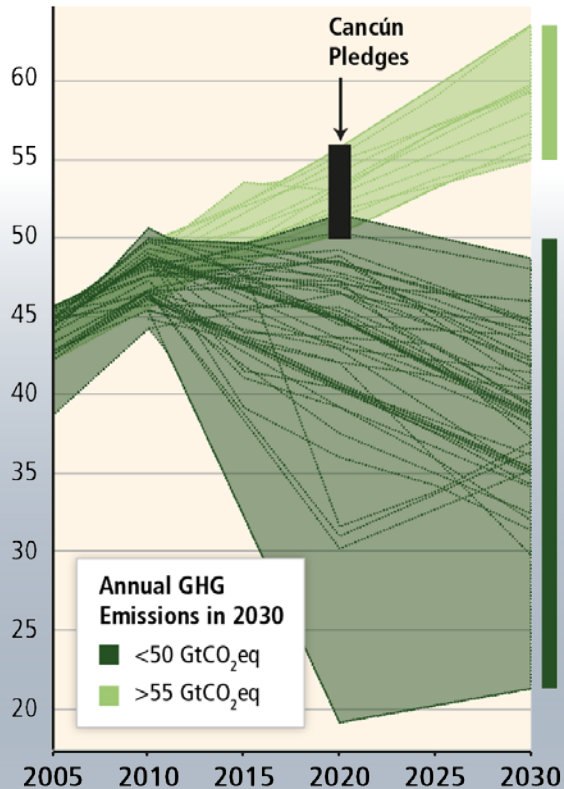
Stabilising the atmosphere means moving away from business-as-usual – regardless of how ambitious we are.



Delaying mitigation until 2030 increases the difficulty and narrows the options for limiting warming to 2°C.

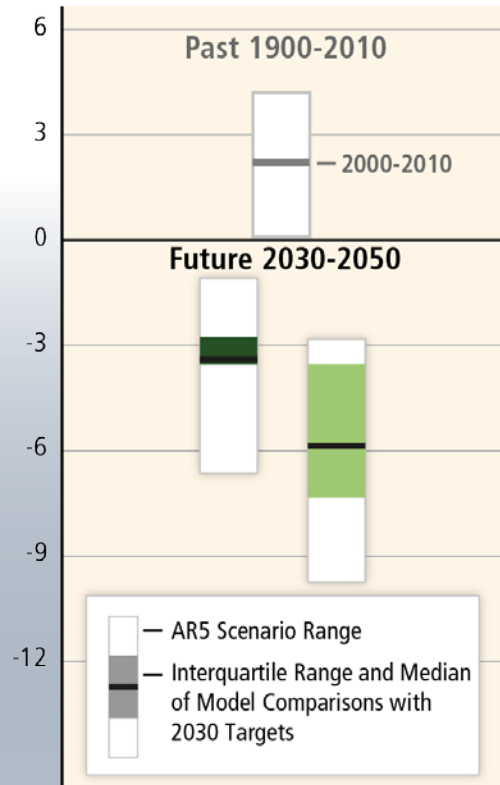
Before 2030

GHG Emissions Pathways [GtCO₂eq/yr]

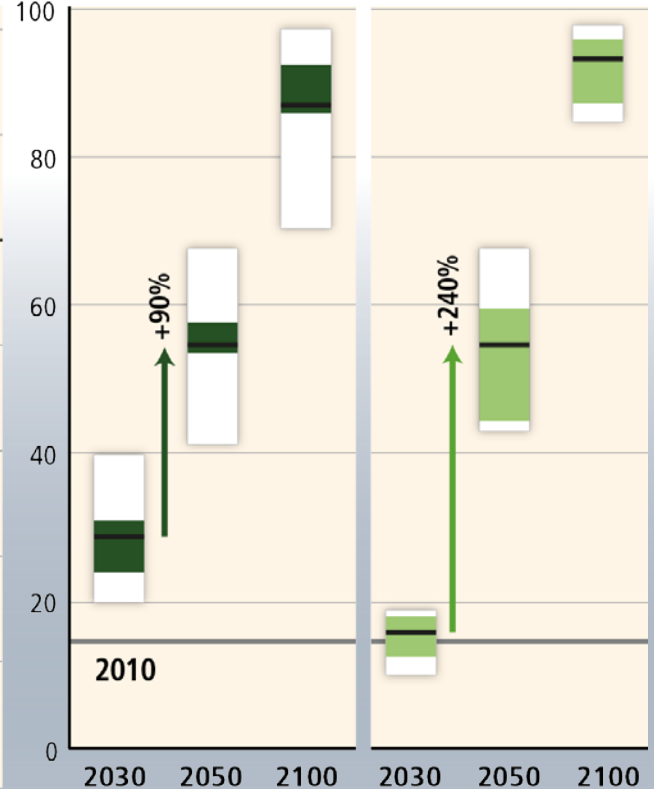


After 2030

Rate of CO₂ Emission Change [%/yr]



Share of Low-Carbon Energy [%]



IPCC AR5

Mitigation Measures (IPCC AR5)



More efficient use of energy



Greater use of low-carbon and no-carbon energy

- Many of these technologies exist today



Improved carbon sinks

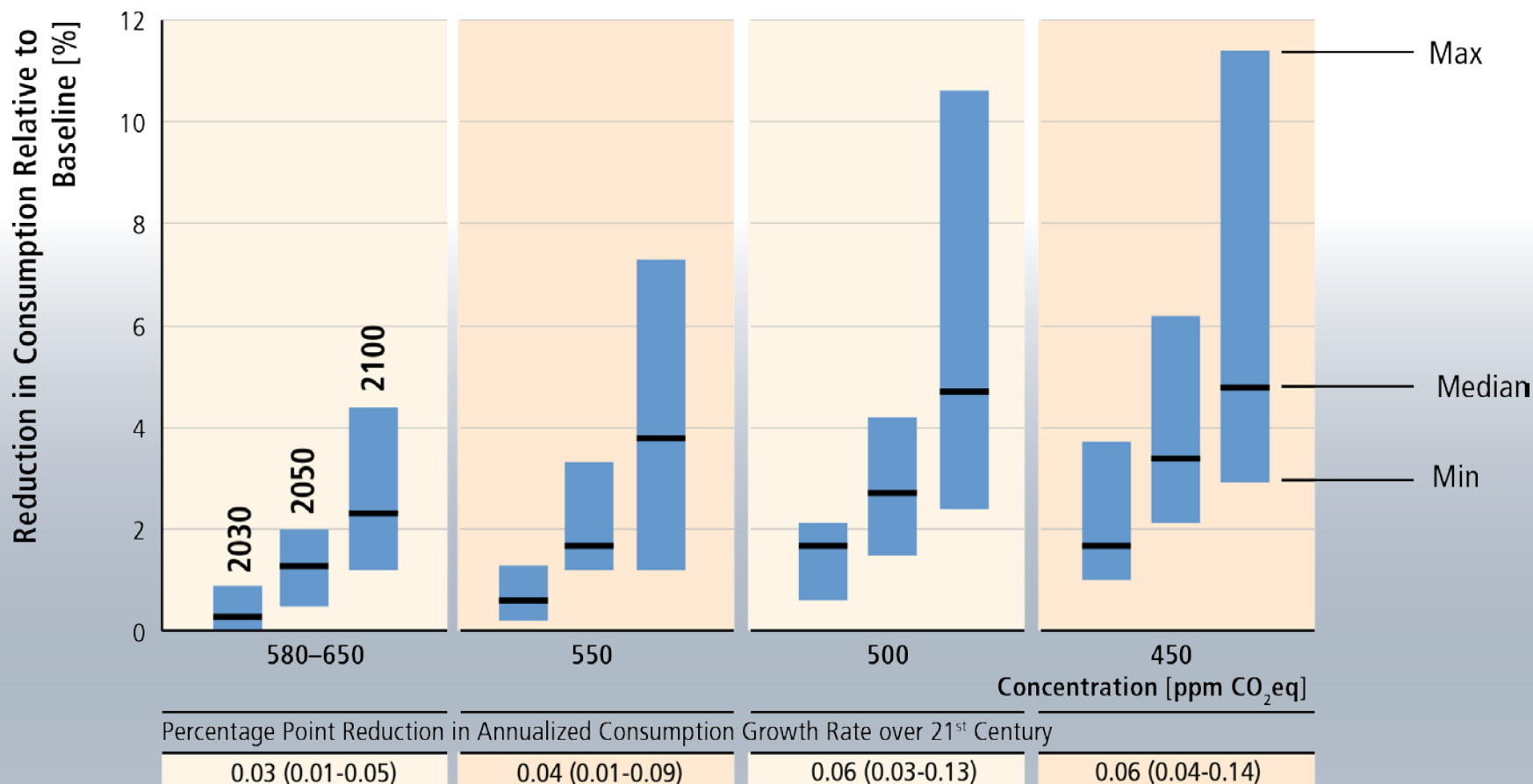
- Reduced deforestation and improved forest management and planting of new forests
- Bio-energy with carbon capture and storage



Lifestyle and behavioural changes

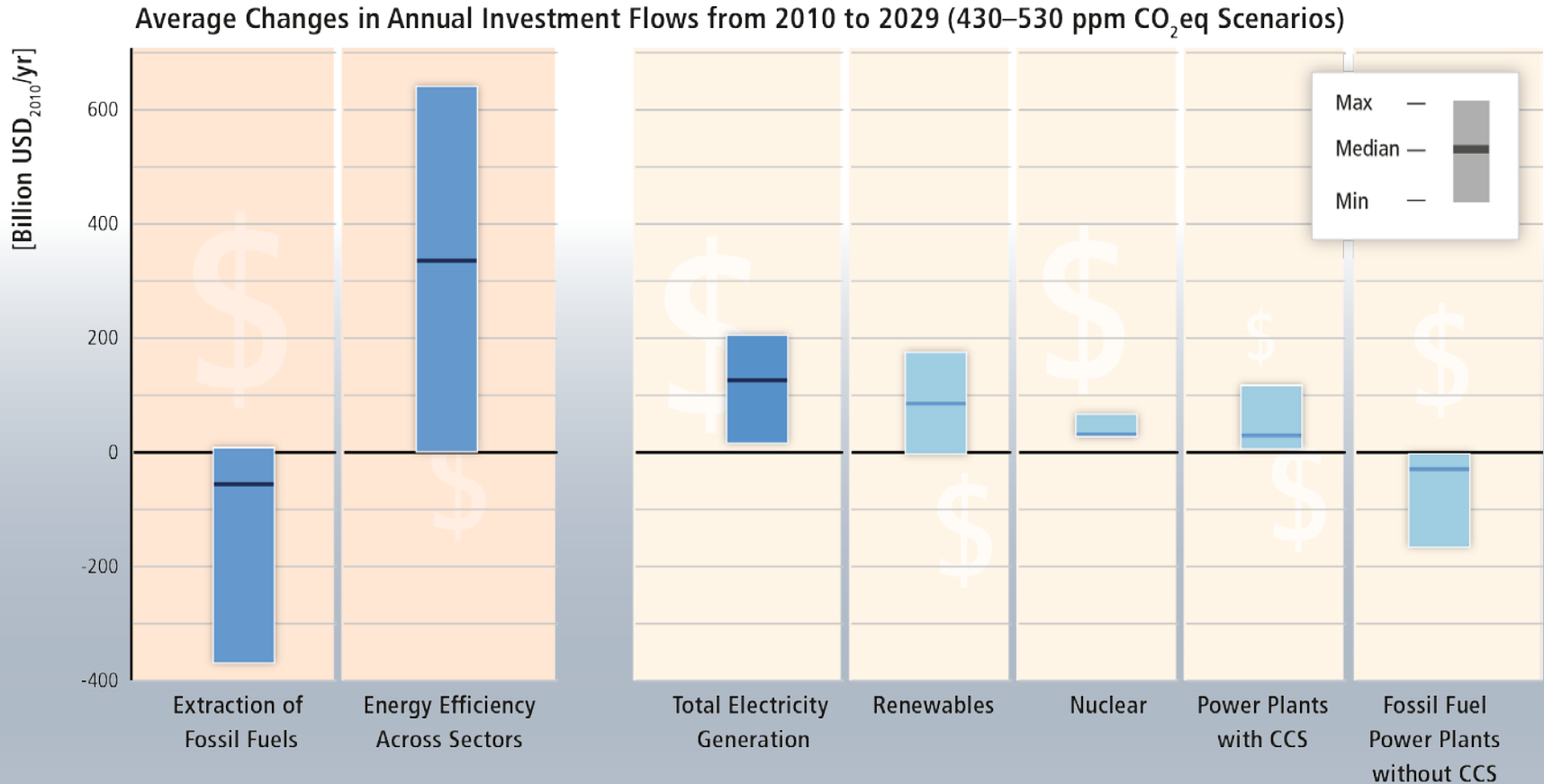
AR5 WGIII SPM

Global costs rise with the ambition of the mitigation goal.



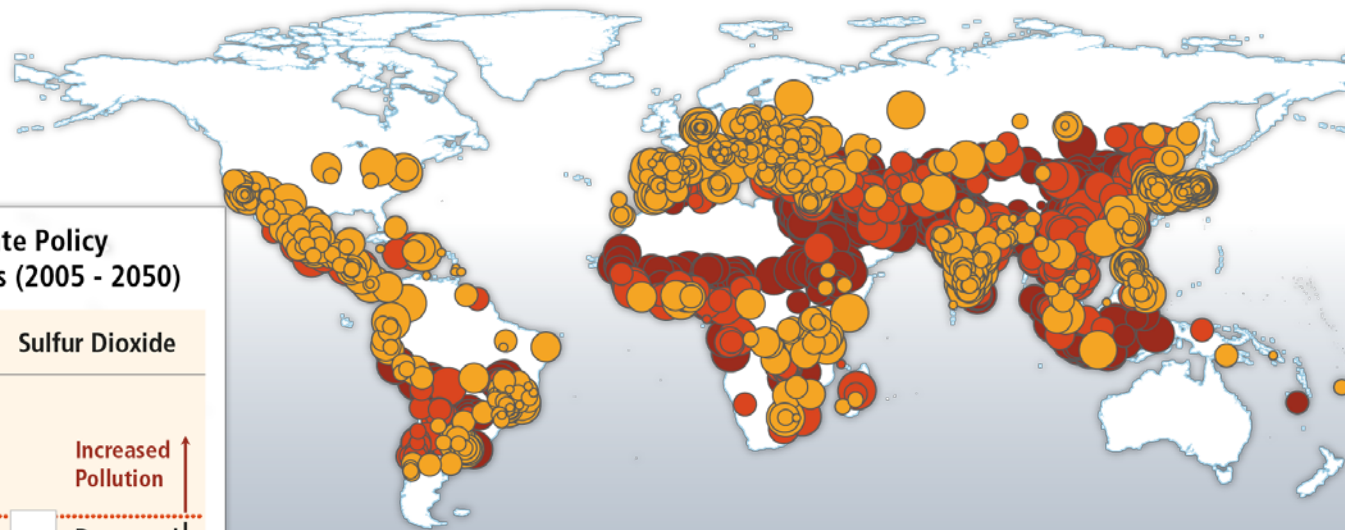
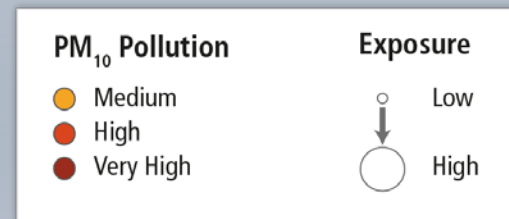
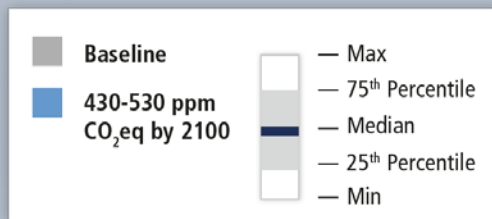
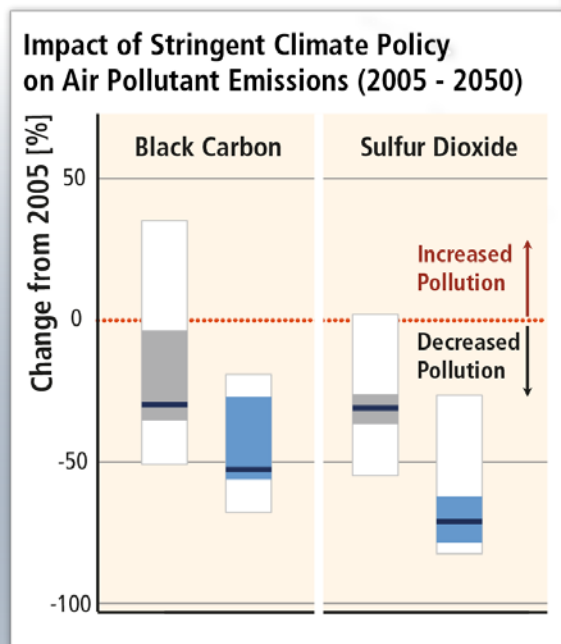
IPCC AR5

Substantial reductions in emissions would require large changes in investment patterns.



IPCC AR5

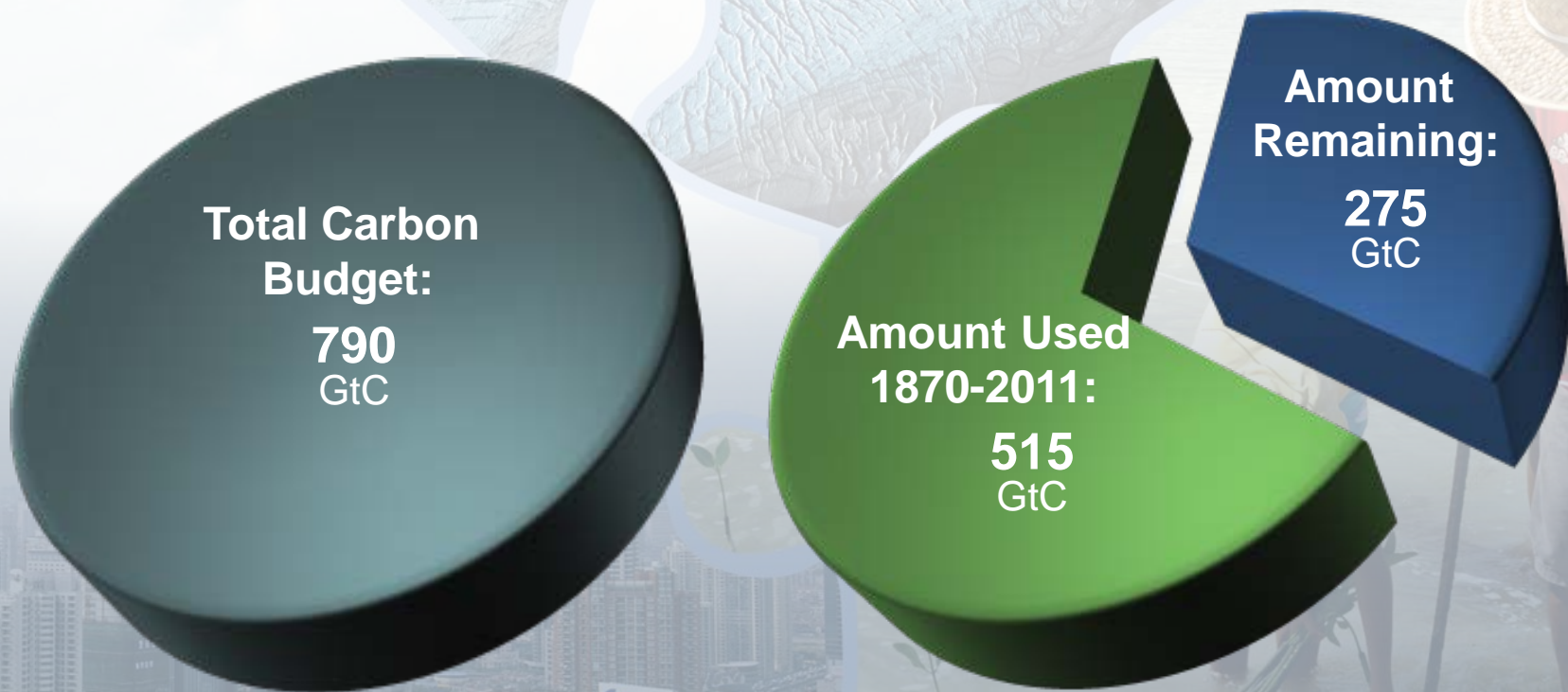
Climate change mitigation can bring co-benefits – health, energy security and other societal goals.



Based on Figures SPM.6 and 12.23

The window for action is rapidly closing (IPCC AR5)

65% of our carbon budget compatible with a 2°C goal already used



AR5 WGI SPM

The key aims of the Paris Agreement – Article 2

This Agreement.... aims to strengthen the global response to the threat of climate change ...by:

(a) Holding the increase in the global average temperature to **well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels**, recognizing that this would significantly reduce the risks and impacts of climate change;

(b) **Increasing the ability to adapt** to the adverse impacts of climate change and **foster climate resilience** and **low greenhouse gas emissions development**, in a manner that **does not threaten food production**;

(c) Making **finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development**

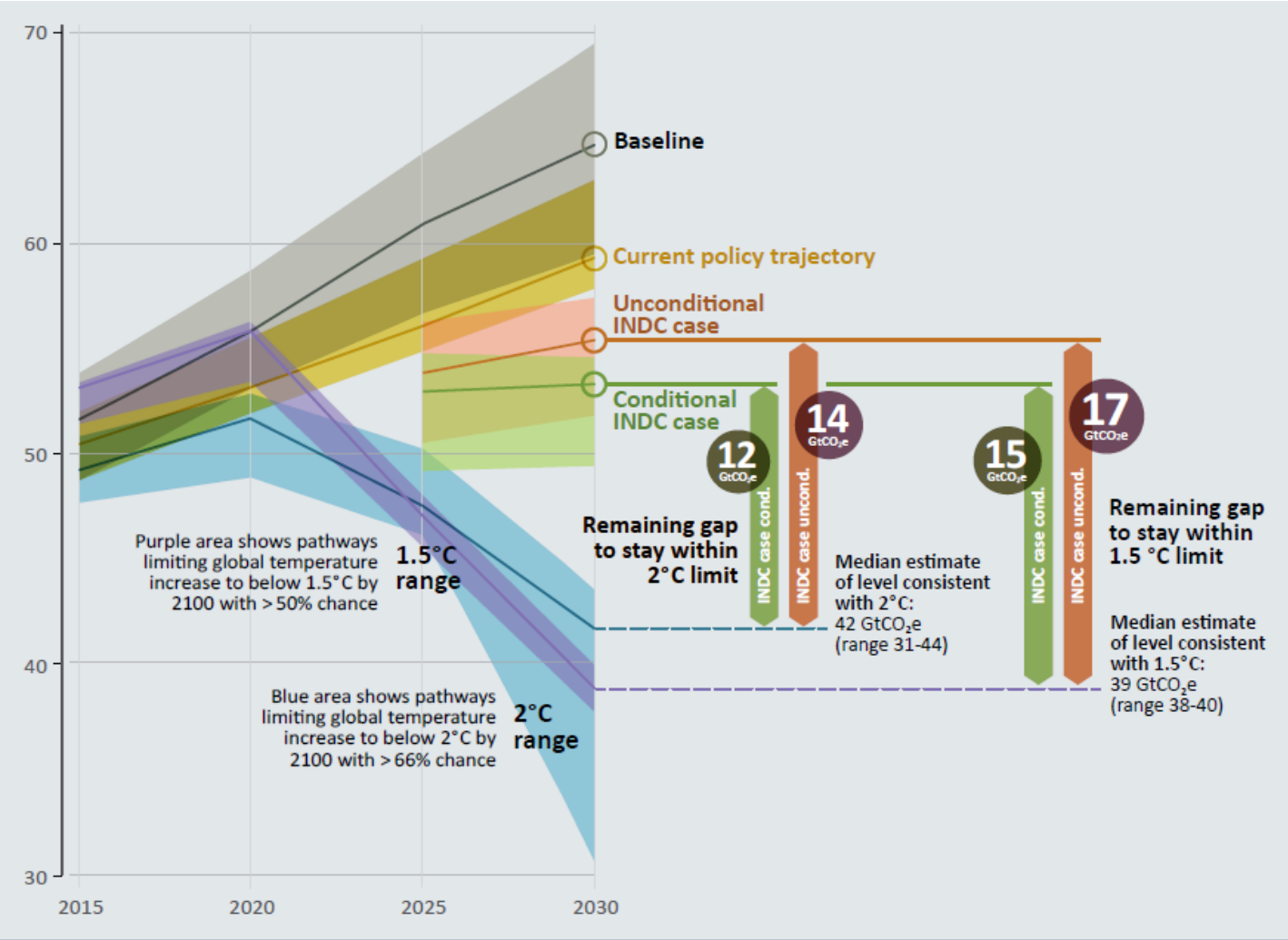
Peaking and “Net Zero”: Paris Agreement Article 4.1

In order to achieve the long-term temperature goal set out in Article 2, Parties ... **aim to reach global peaking of greenhouse gas emissions as soon as possible,**

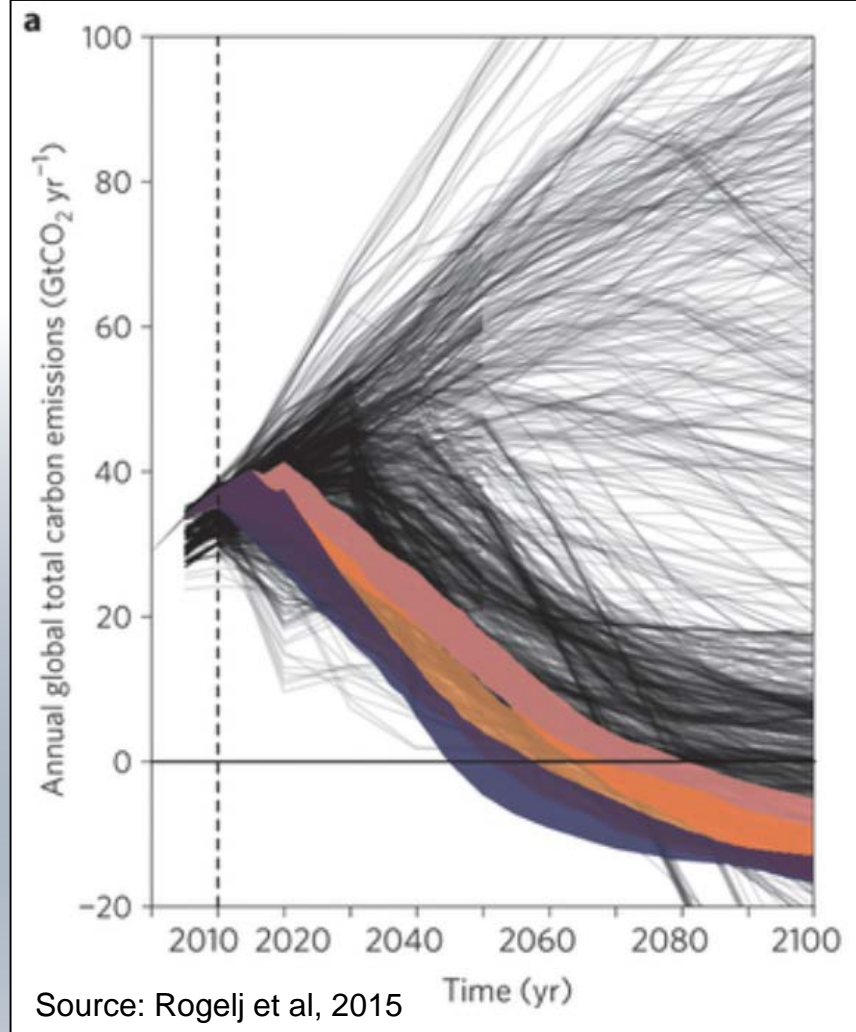
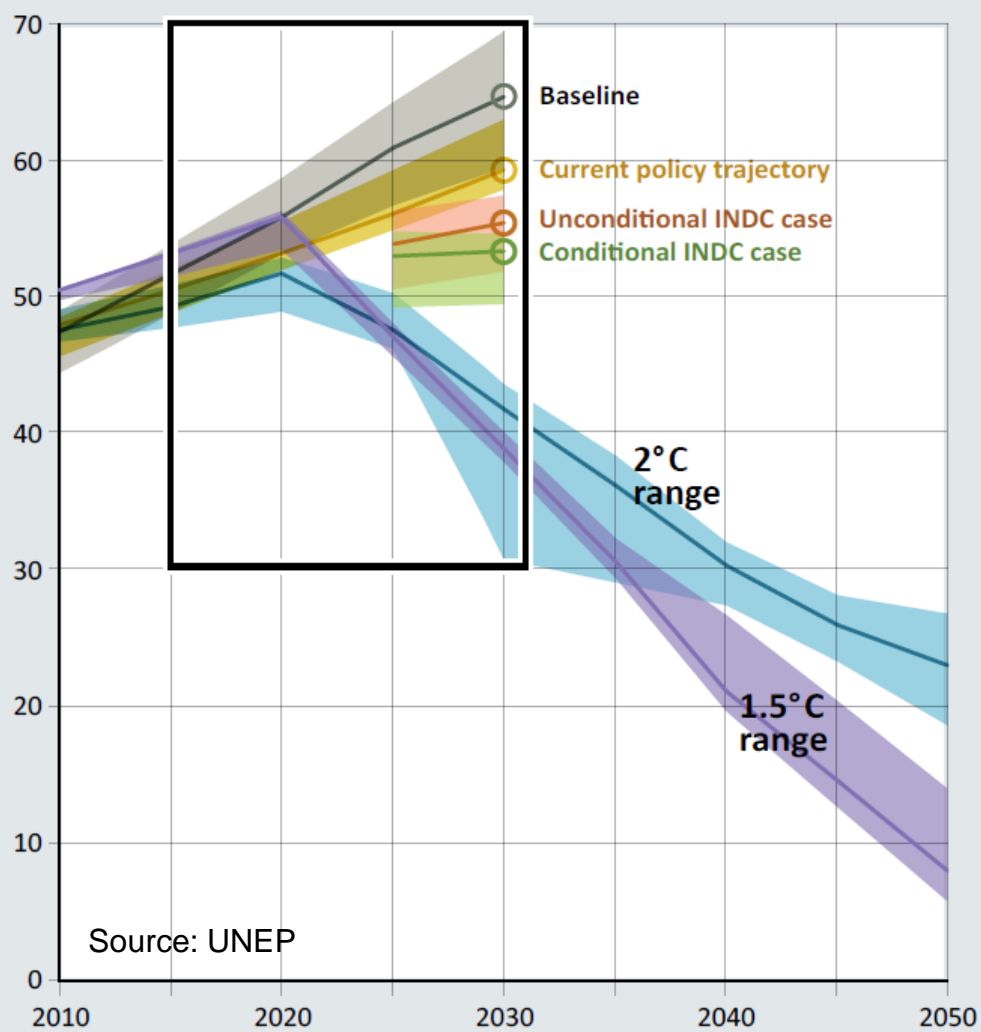
recognizing that peaking will take longer for developing country Parties, ... **and to undertake rapid reductions thereafter** in accordance with best available science,

...so as to **achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century,** on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

Current NDCs are not enough

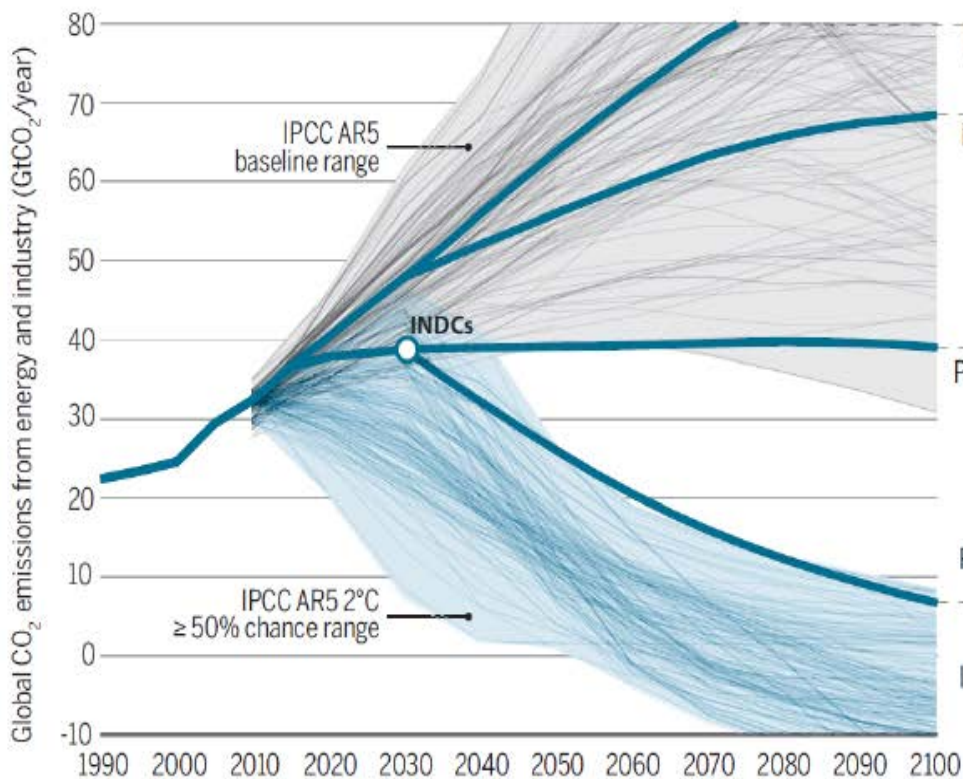


The view to 2050 and beyond

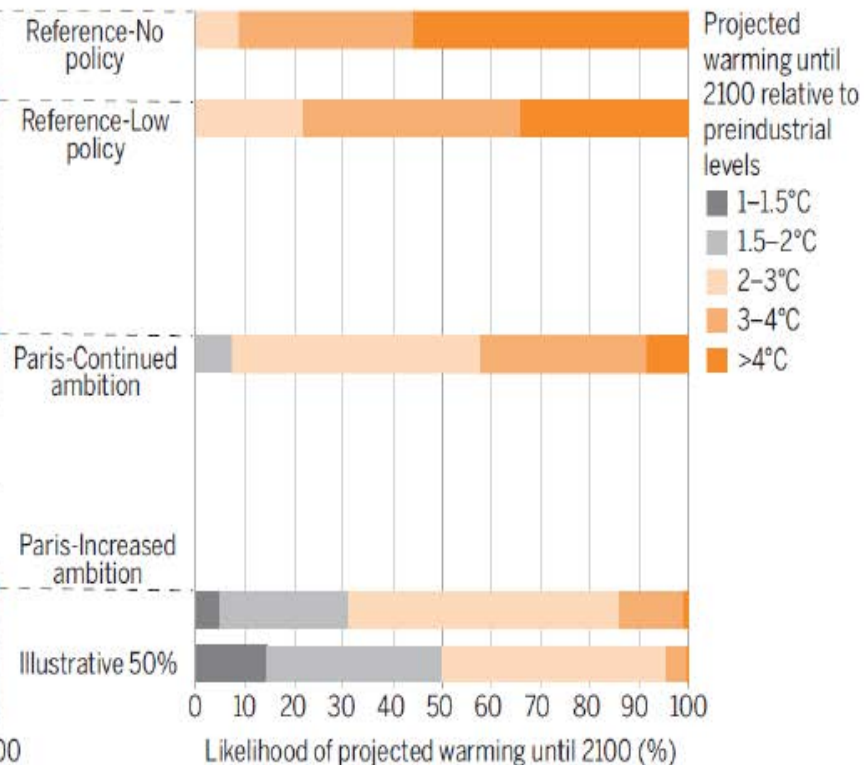


On what path the NDCs take us? What aspects of socio-economic development and ambition persist beyond 2030?

A Emissions pathways



B Temperature probabilities

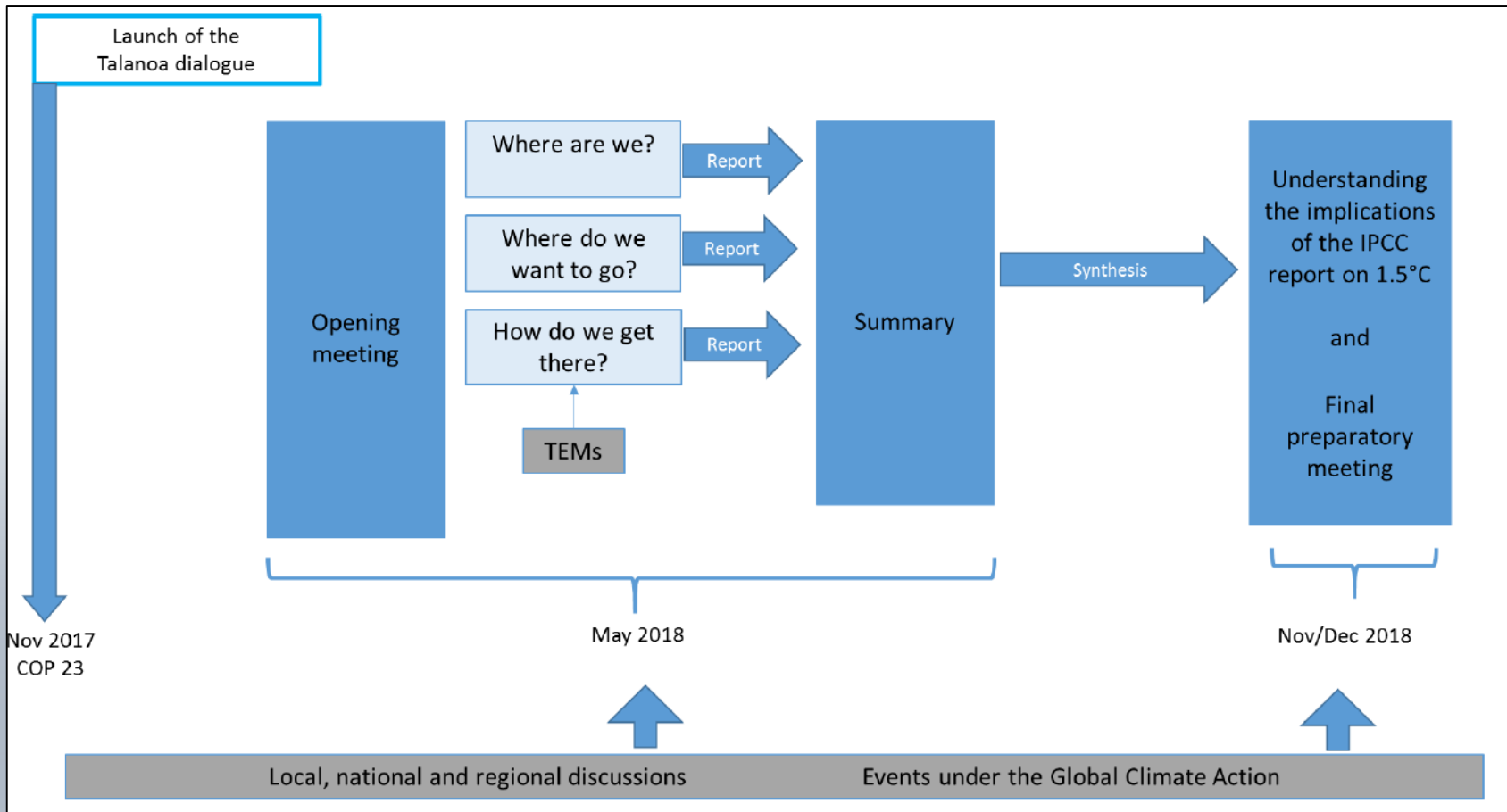


Fawcett et al., Science 2015

Ratcheting up ambition? The Global Stocktake

- Once every five years, starting in 2023
- **Raising Ambition:** Every revised NDC must be more ambitious than the previous
- **Global stocktake zero:** the “facilitative dialogue” by end-2018 (after the IPCC Special Report on Global Warming of 1.5°C)
- Aka the “**Talanoa Dialogue**”

The Talanoa Dialogue



“Talanoa is a traditional word used in Fiji and across the Pacific to reflect a process of inclusive, participatory and transparent dialogue. The purpose of Talanoa is to share stories, build empathy and to make wise decisions for the collective good. The process of Talanoa involves the sharing of ideas, skills and experience through storytelling”

Main Products during the IPCC AR6 cycle (1)

Special Reports

**Special Report on Global Warming
of 1.5°C (SR15)**

Approval October 2018



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11



**Special Report on Ocean and
Cryosphere (SROCC)**



**Special Report on Climate
Change and Land (SRCCL)**



Approval Sept 2019

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Thank you