SIXTH ASSESSMENT REPORT

Climate Change 2023: Synthesis Report

IPCC
INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

Overview: climate science, impacts, adaptation and emission-reduction

Prof Mark Howden, Director, ANU Institute for Climate, Energy and Disaster Solutions
Vice Chair, Working Group II

https://iceds.anu.edu.au/synthesis-report-factsheets

[Credit: Teekay.]

The IPCC Synthesis report by the numbers

93 involved in writing the report

43 Countries

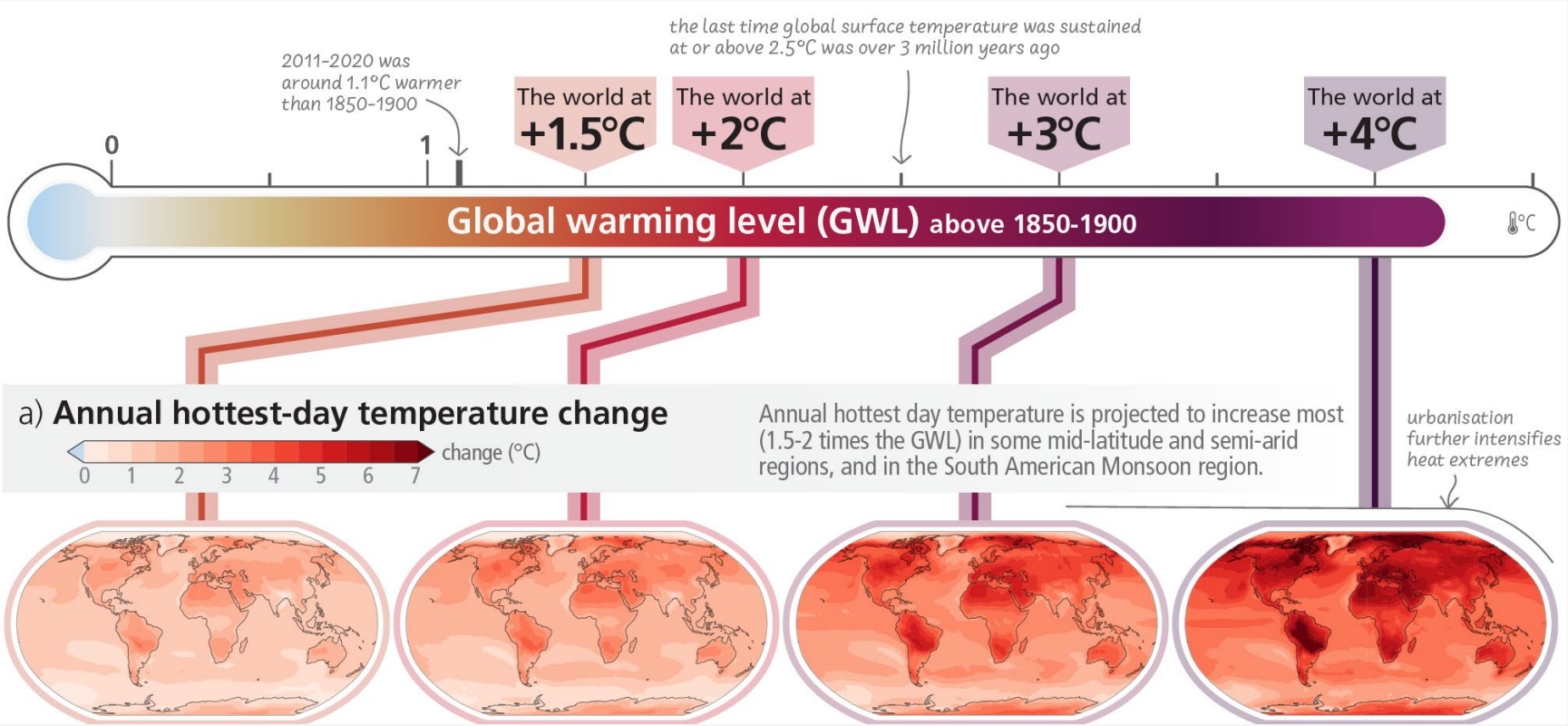
40 % Developing countries
60 % Developed countries

44 % Women / 56 % Men

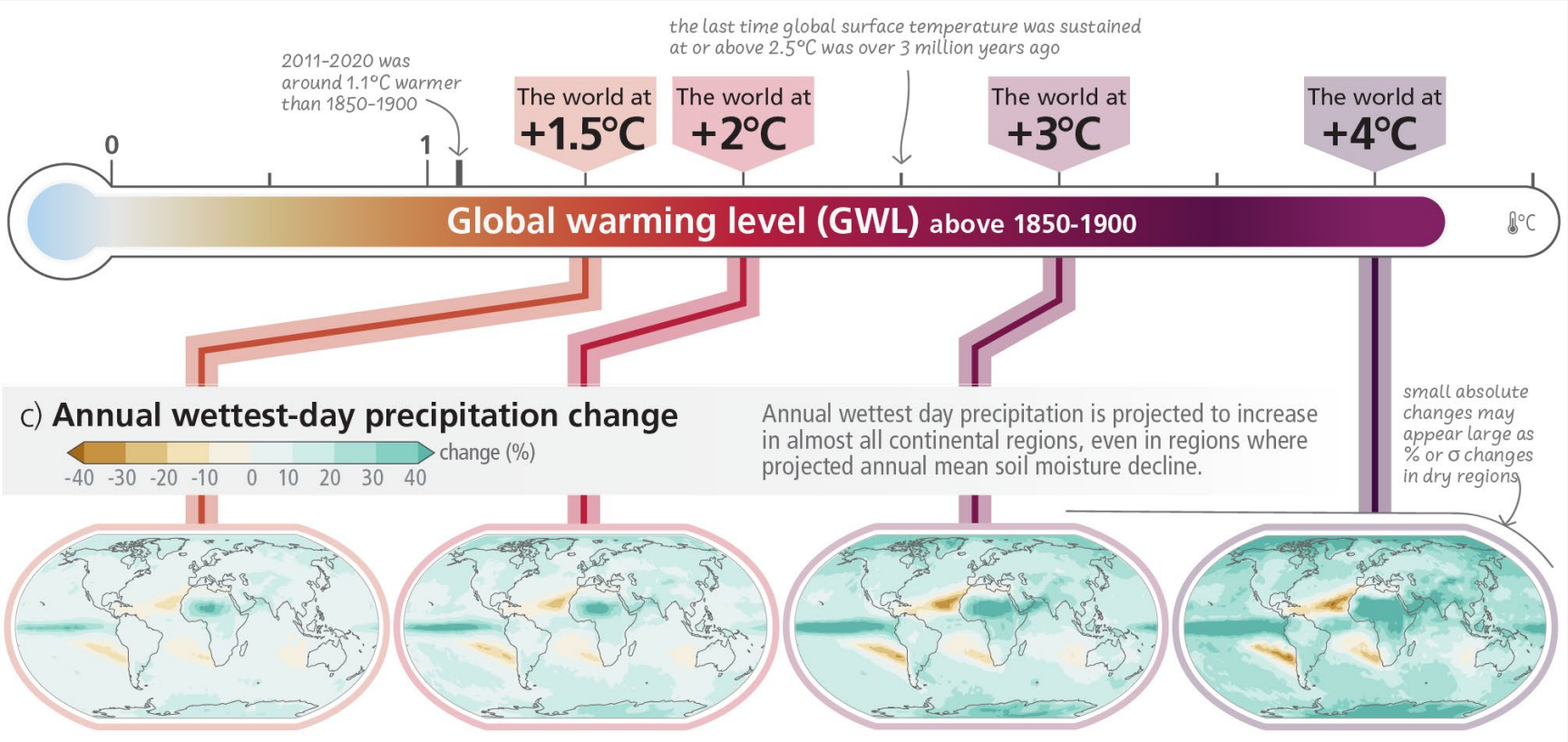
6841
Review comments

Synthesising about 12500 pages

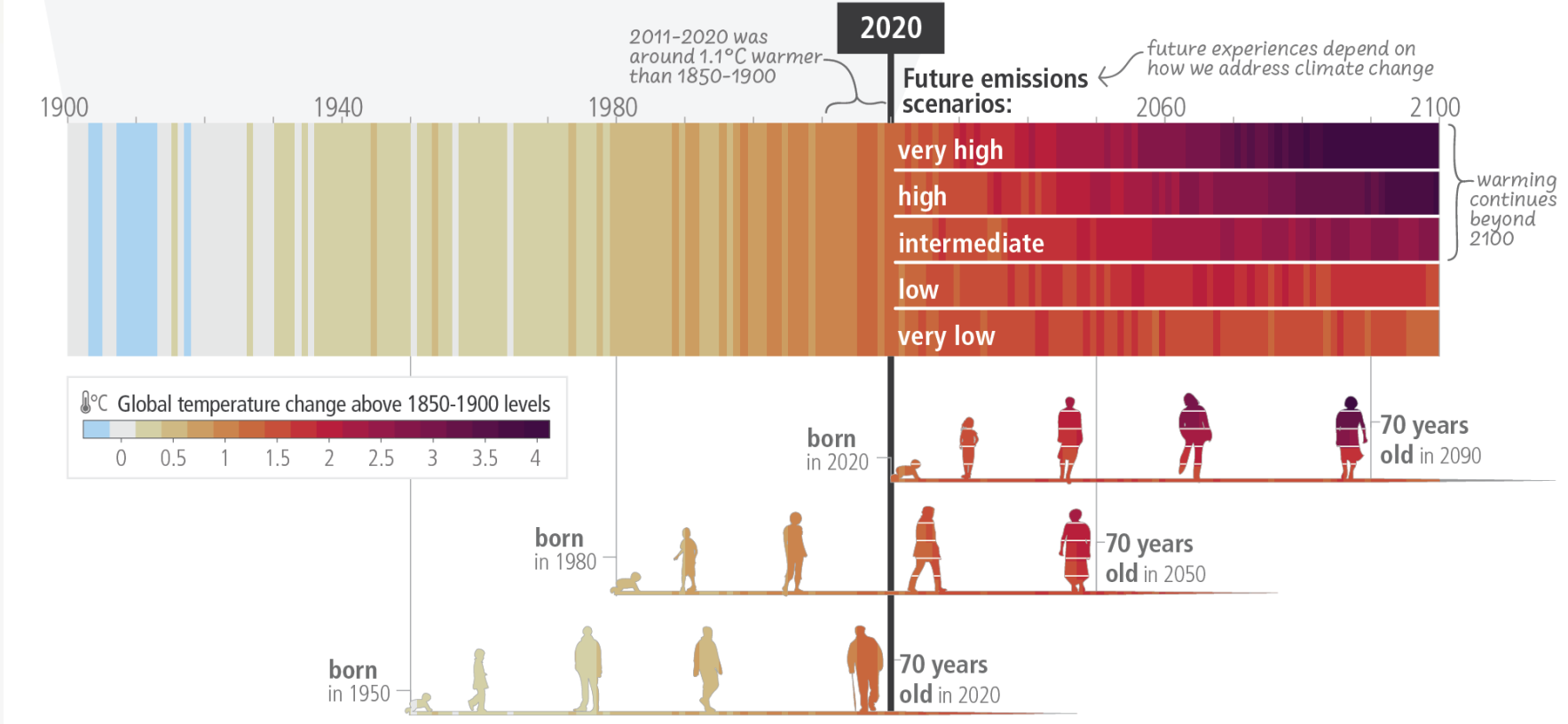
Temperatures, emissions and equity



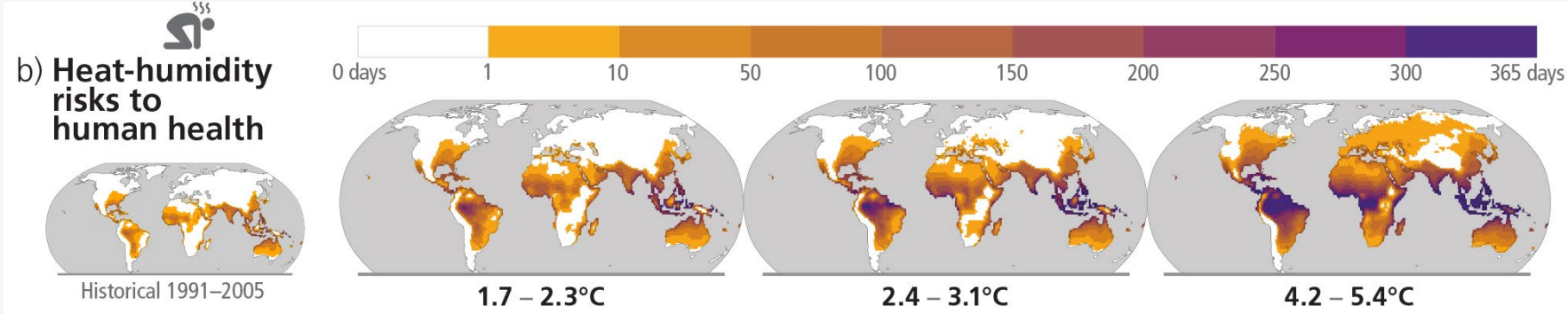
Rainfall and rainfall intensity

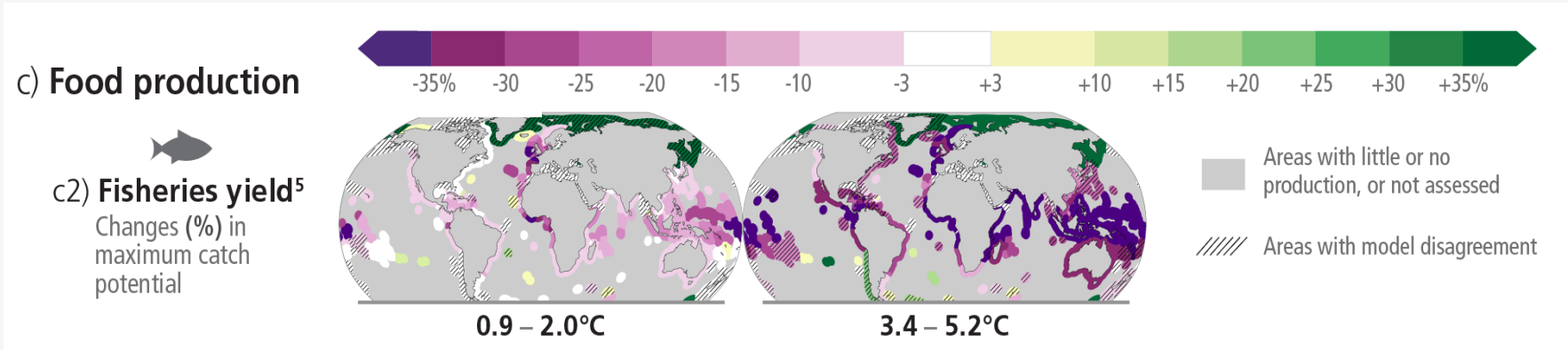


Temperatures and intergenerational equity



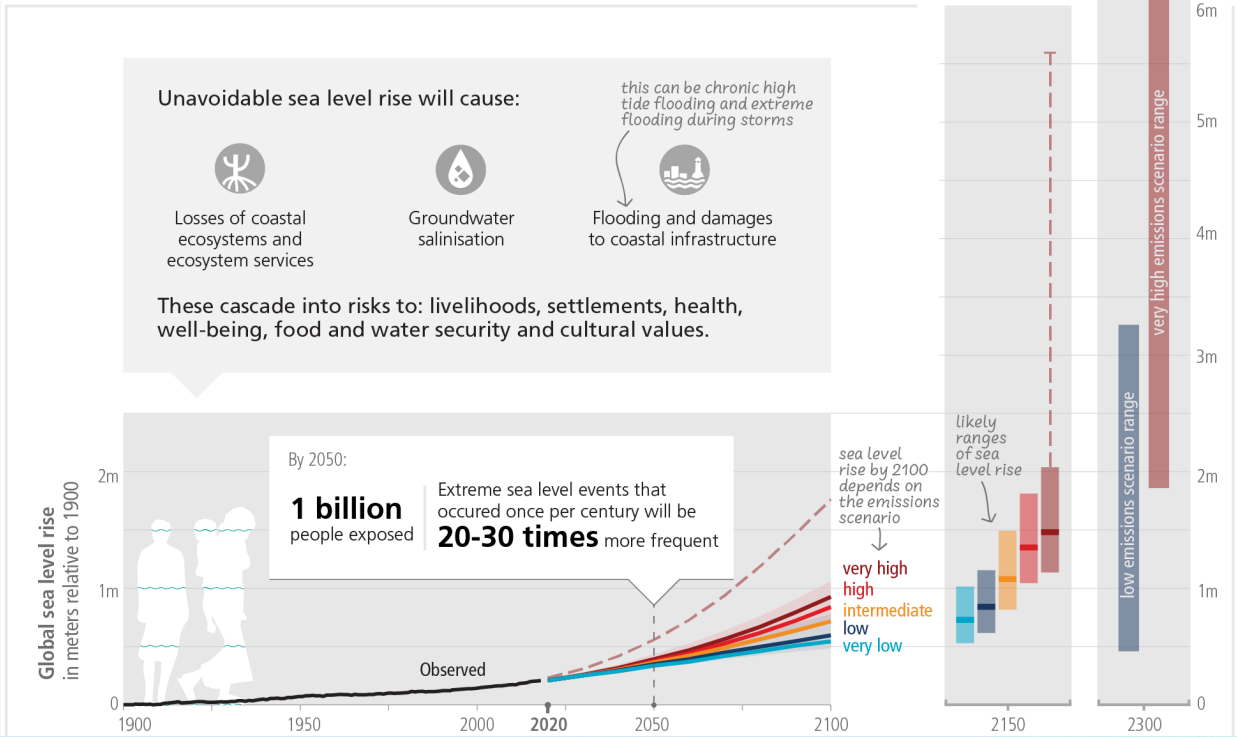
Serious, uneven impacts across systems



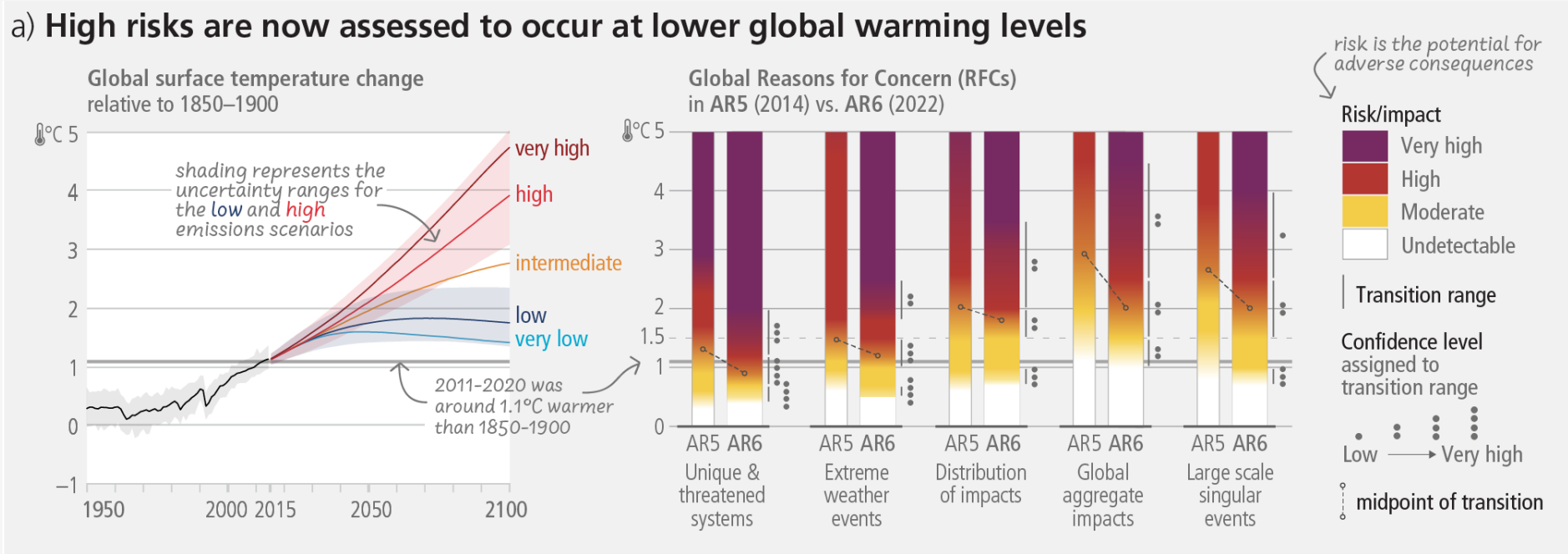


Sea level rise for millennia – but how much and how fast ?

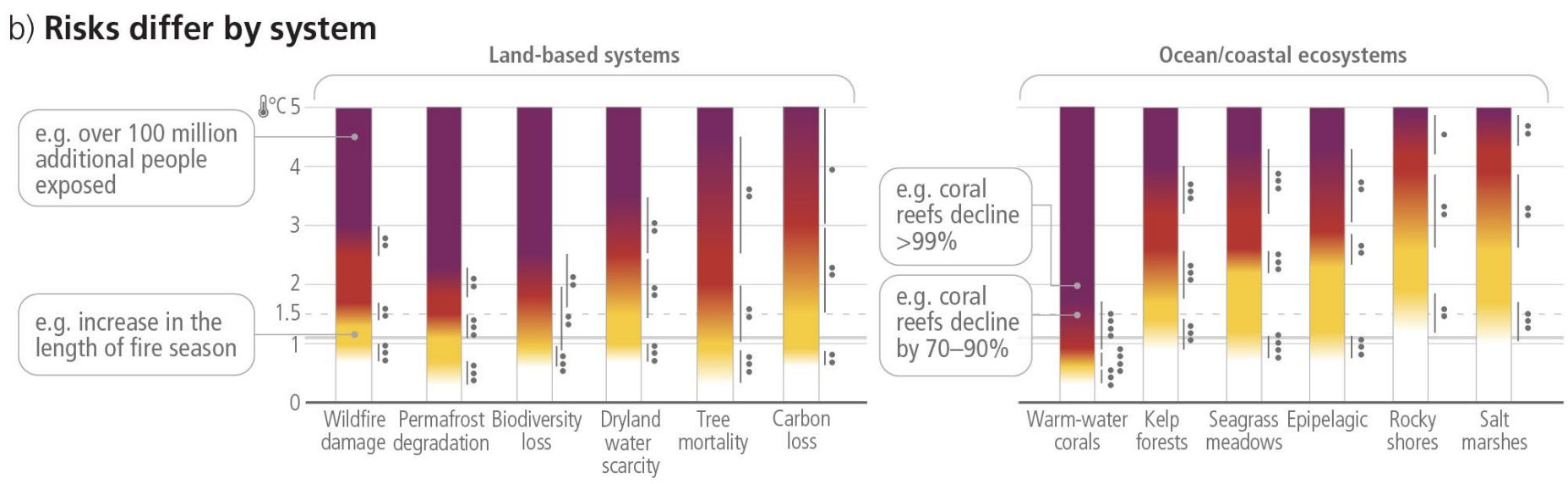
a) **Sea level rise: observations and projections 2020-2100, 2150, 2300** (relative to 1900)



Assessed risks now higher at a given temperature



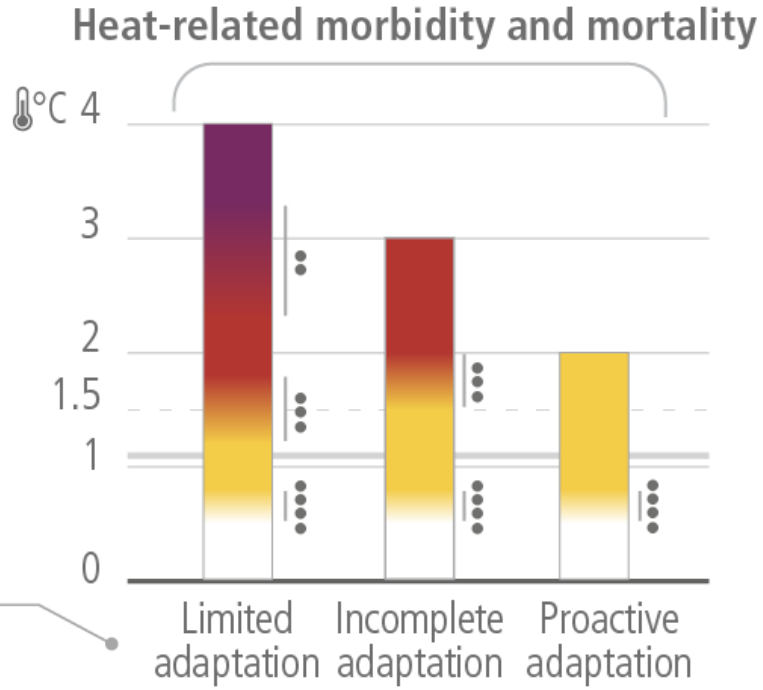
Risks vary across systems



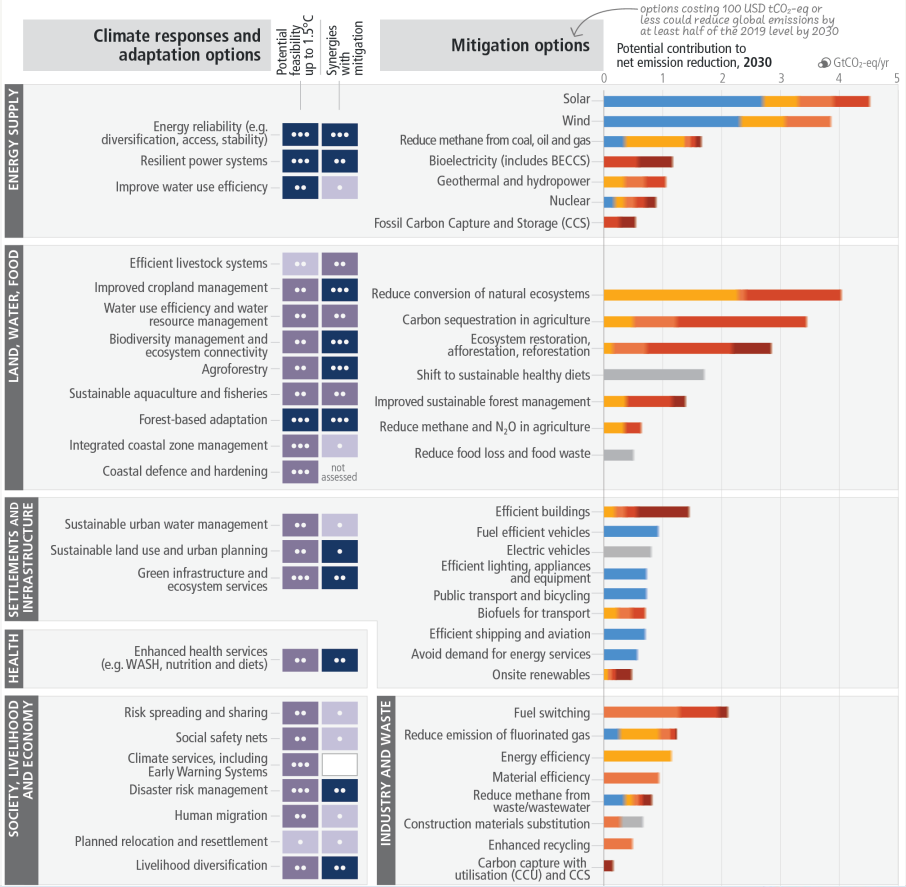
Adaptation can potentially reduce risks a lot

d) Adaptation and socio-economic pathways affect levels of climate related risks

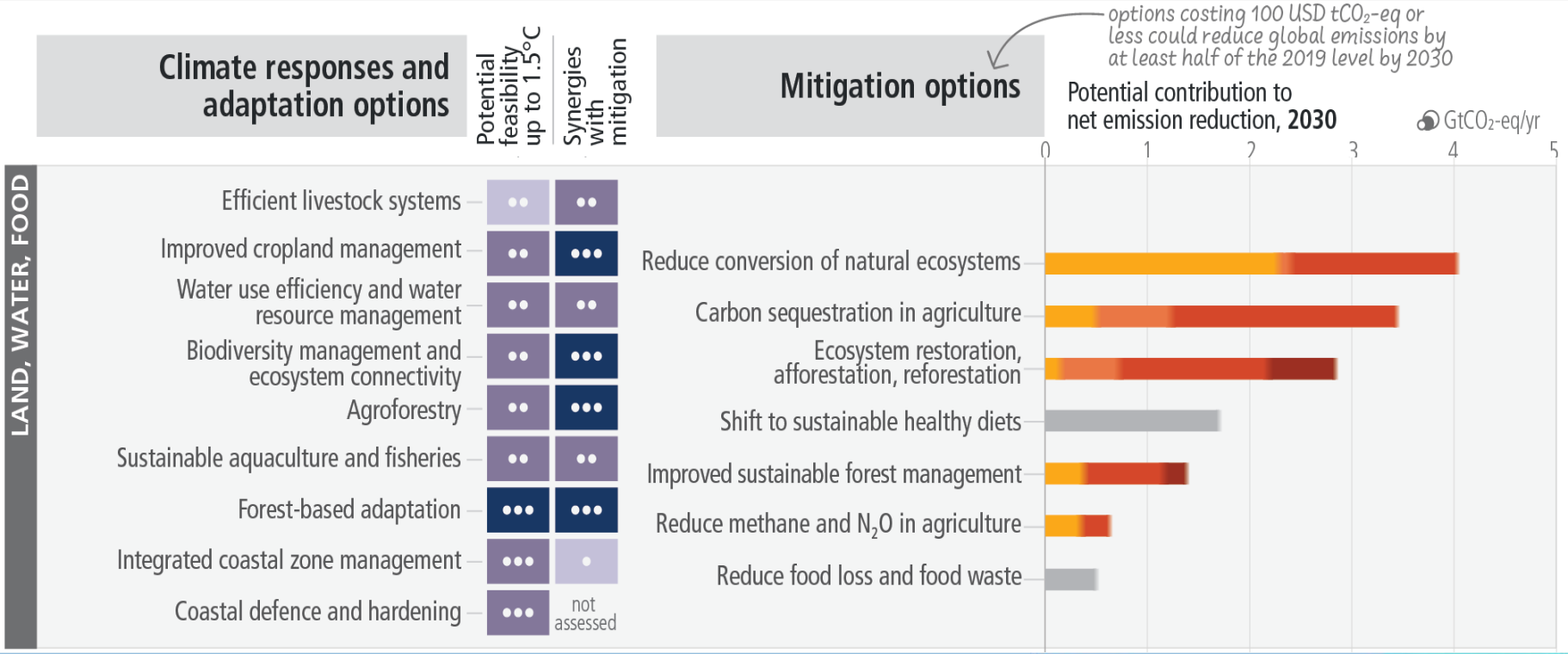
Limited adaptation (failure to proactively adapt; low investment in health systems); incomplete adaptation (incomplete adaptation planning; moderate investment in health systems); proactive adaptation (proactive adaptation management; higher investment in health systems)



Many feasible emission-reduction and adaptation options



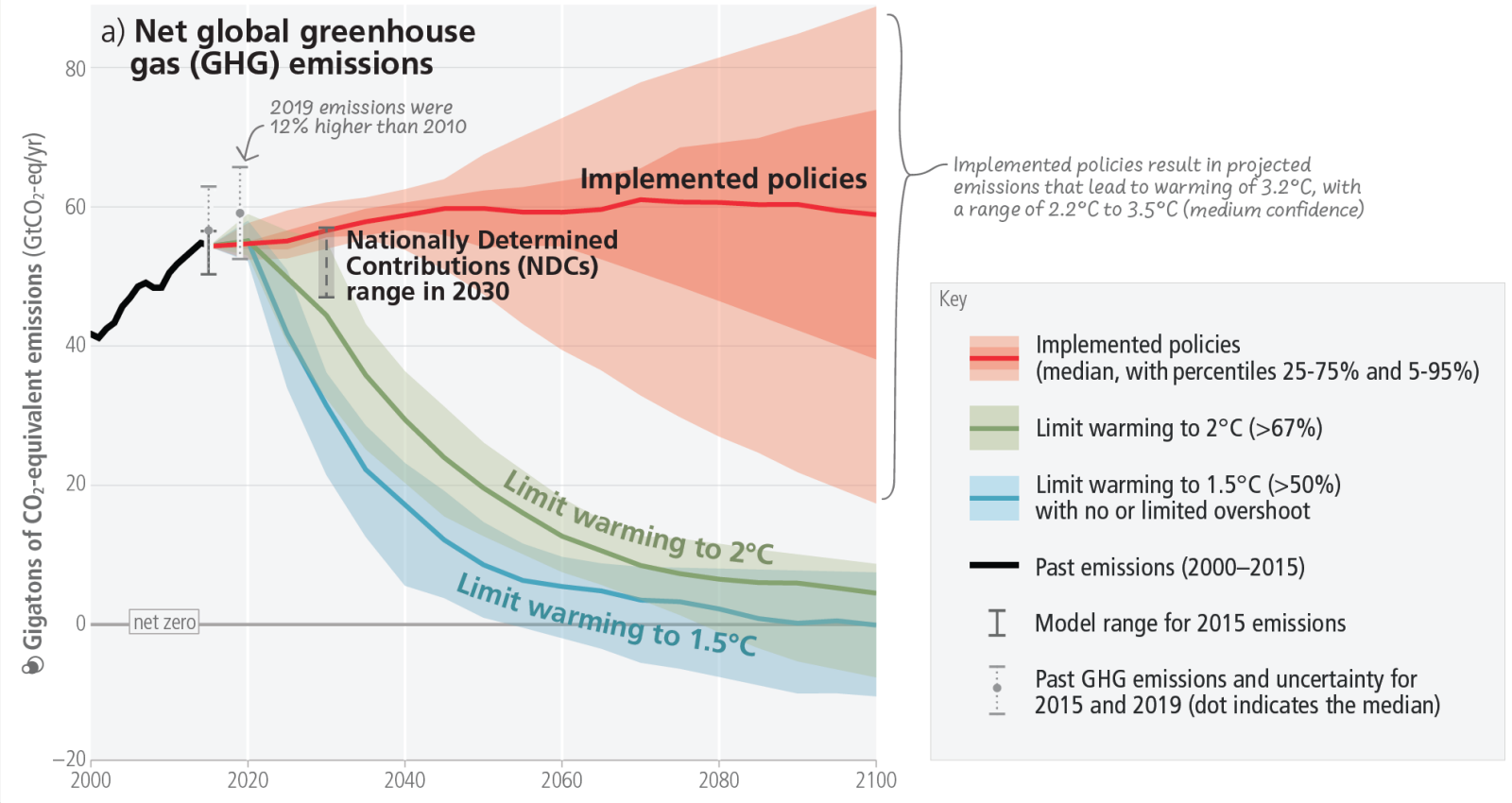
Adaptations are often feasible and overlap with mitigation and sustainable development



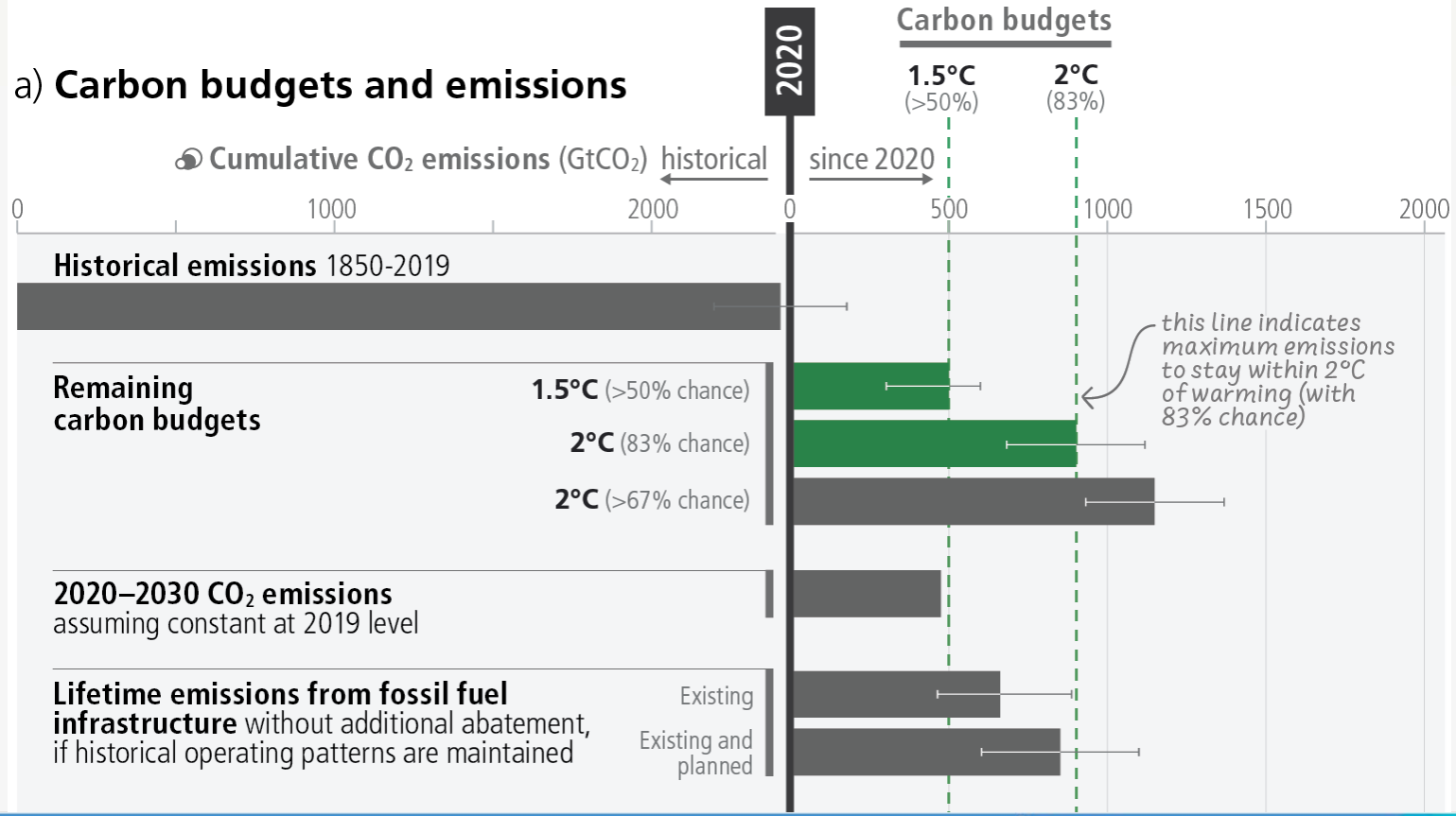
Adaptation action needs urgent attention

- Despite progress, adaptation gaps exist, will likely continue to grow and are largest amongst the poor
- Most observed adaptation responses are fragmented, incremental, sector-specific and unequally distributed regionally
- There are lots of barriers to effective adaptation but we broadly know how to overcome those barriers
- Adaptation options feasible and effective today will become constrained and less effective with increasing climate change
- Effective adaptation can assist emission-reduction and enhance sustainable development

Deep, rapid and sustained emission reductions



Carbon budgets are rapidly running out



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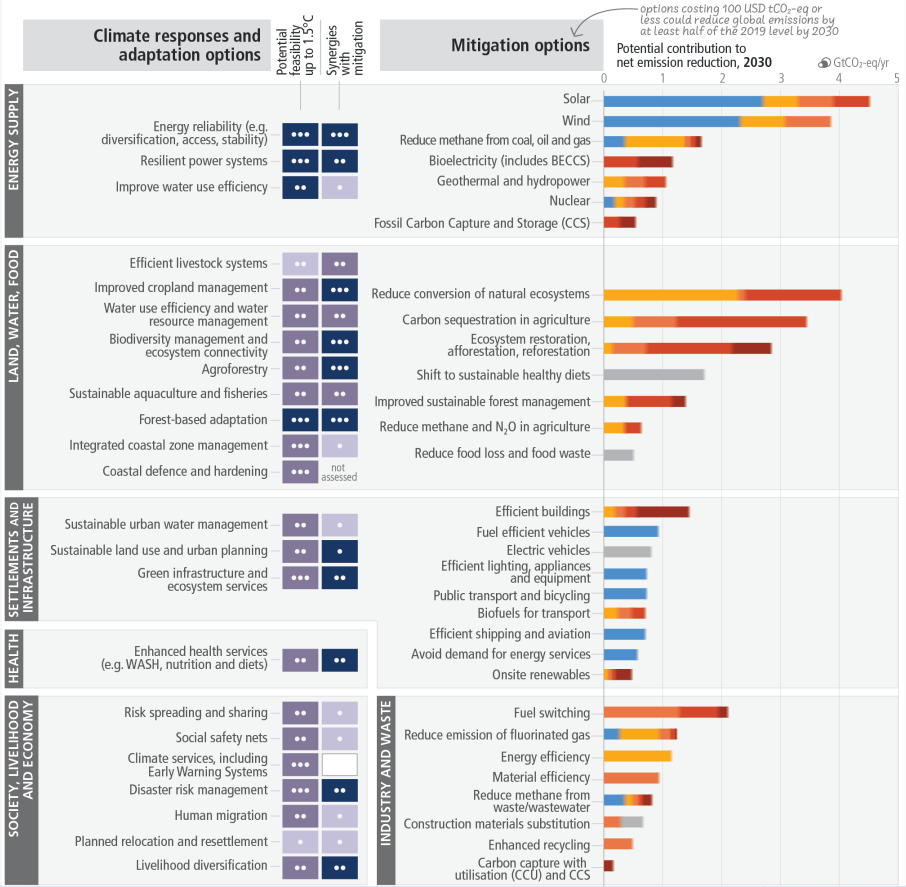
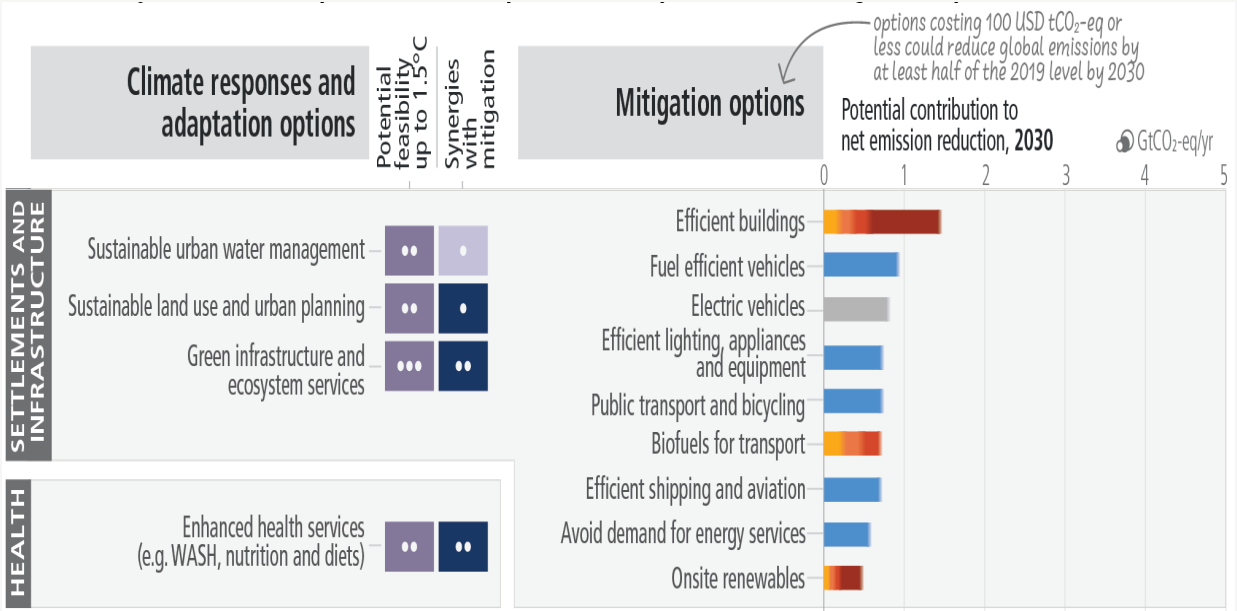


Many options are low cost and bring other benefits



Potential demand-side reductions:

- Electrification 73%
- Transport 67%
- Buildings 66%
- Food 44%
- Industry 29%

The global benefit of climate action is much greater than the cost

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