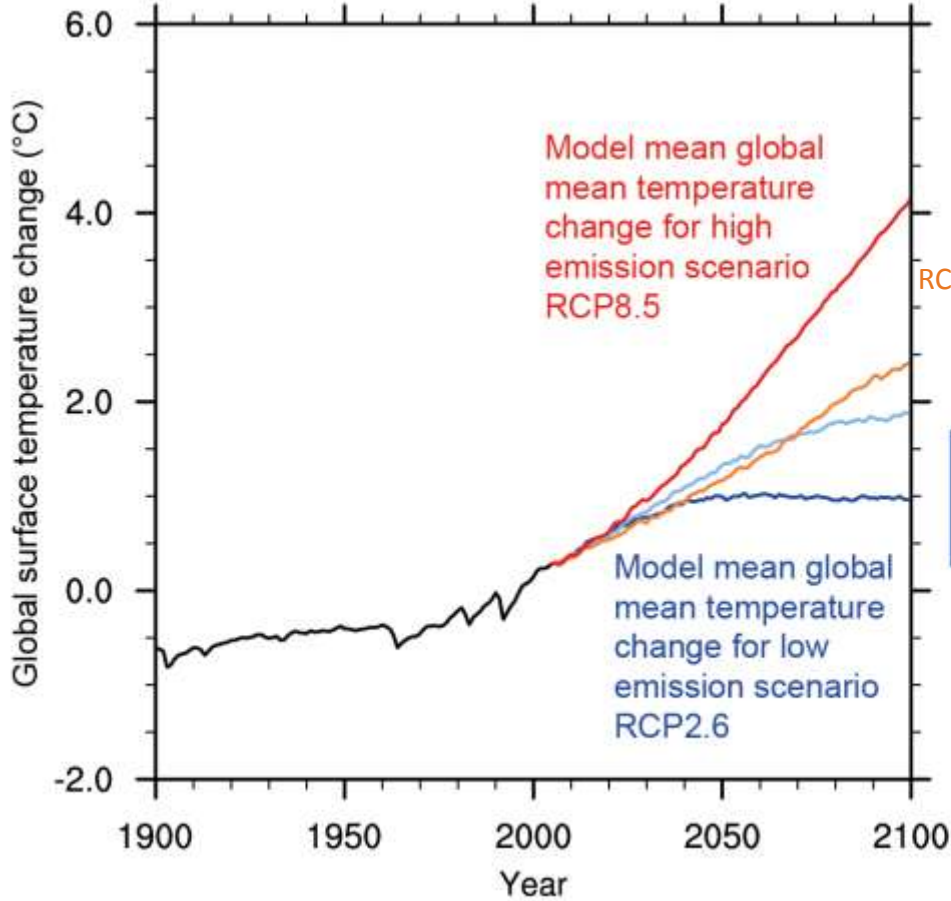




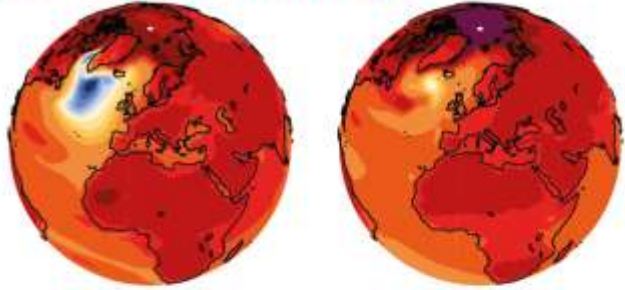
Fifth Assessment Report (AR5) and its implication to Vietnam

H.O Pörtner, Co-Chair WGII AR6
AR5 WGII CLA CH. 6, Ocean Systems,
Ocean products in TS and SPM, CC-Boxes,
Synthesis Report

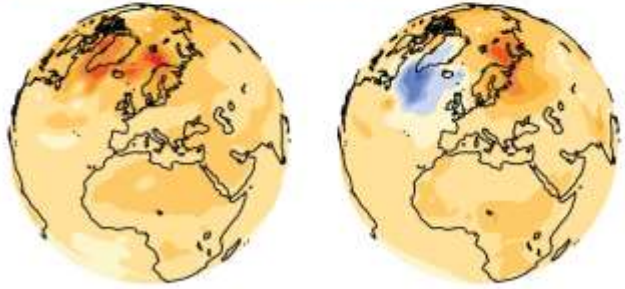
- RCP emission scenarios of global mean temperature change (relative to 1986-2005)



Possible temperature responses in 2081-2100 to high emission scenario RCP8.5



Possible temperature responses in 2081-2100 to low emission scenario RCP2.6



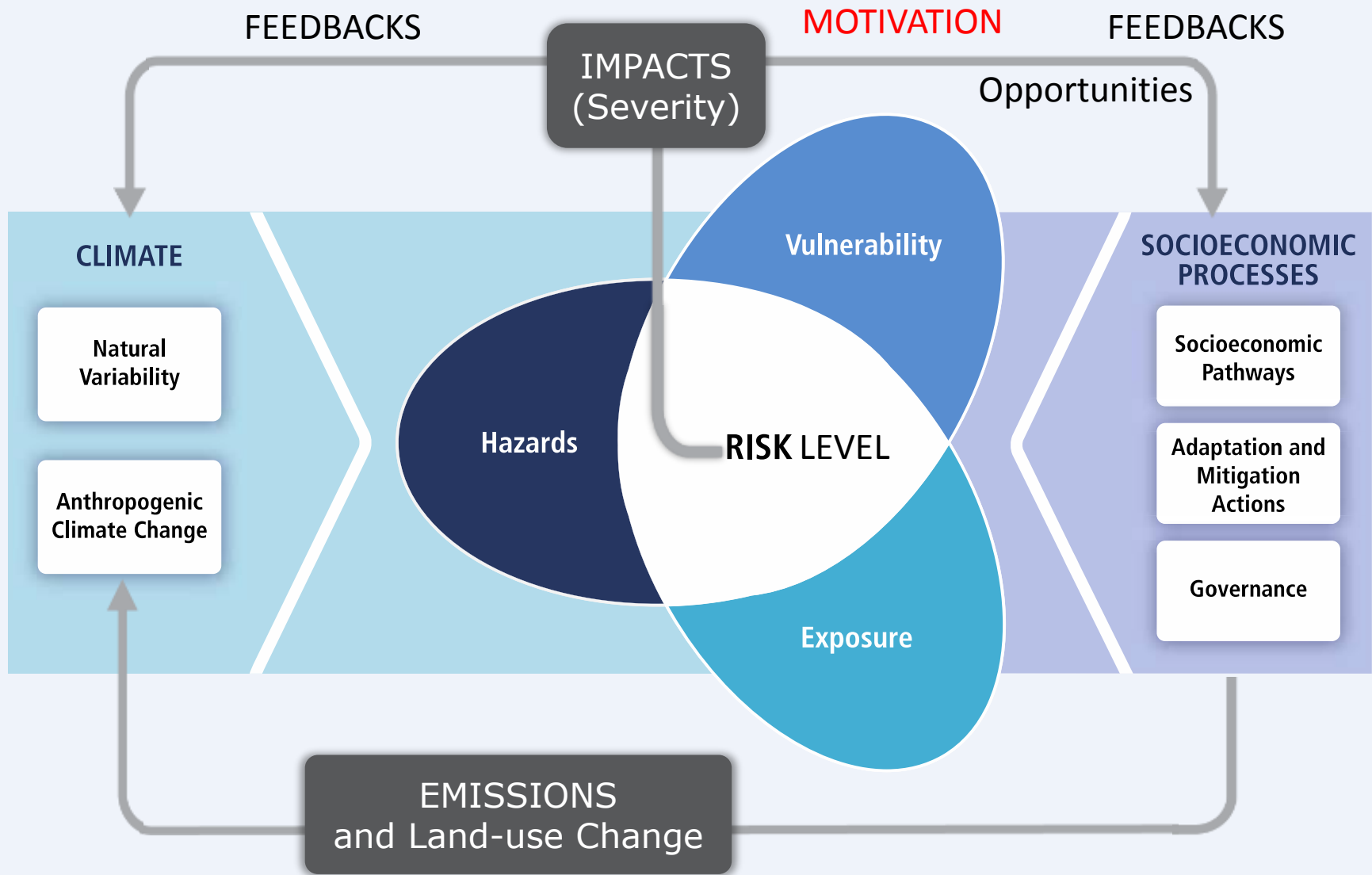


Paris COP 21
November /
December 2015

Leading to the COP21 Agreement:
“...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.”

Heads of delegations

Defining and comparing Long-Term Global Goals (LTGG) in AR5 and beyond?



.... the risk concept of IPCC WGII, liaising to WGI and WGIII approaches
.... linking to Article 2, UNFCCC

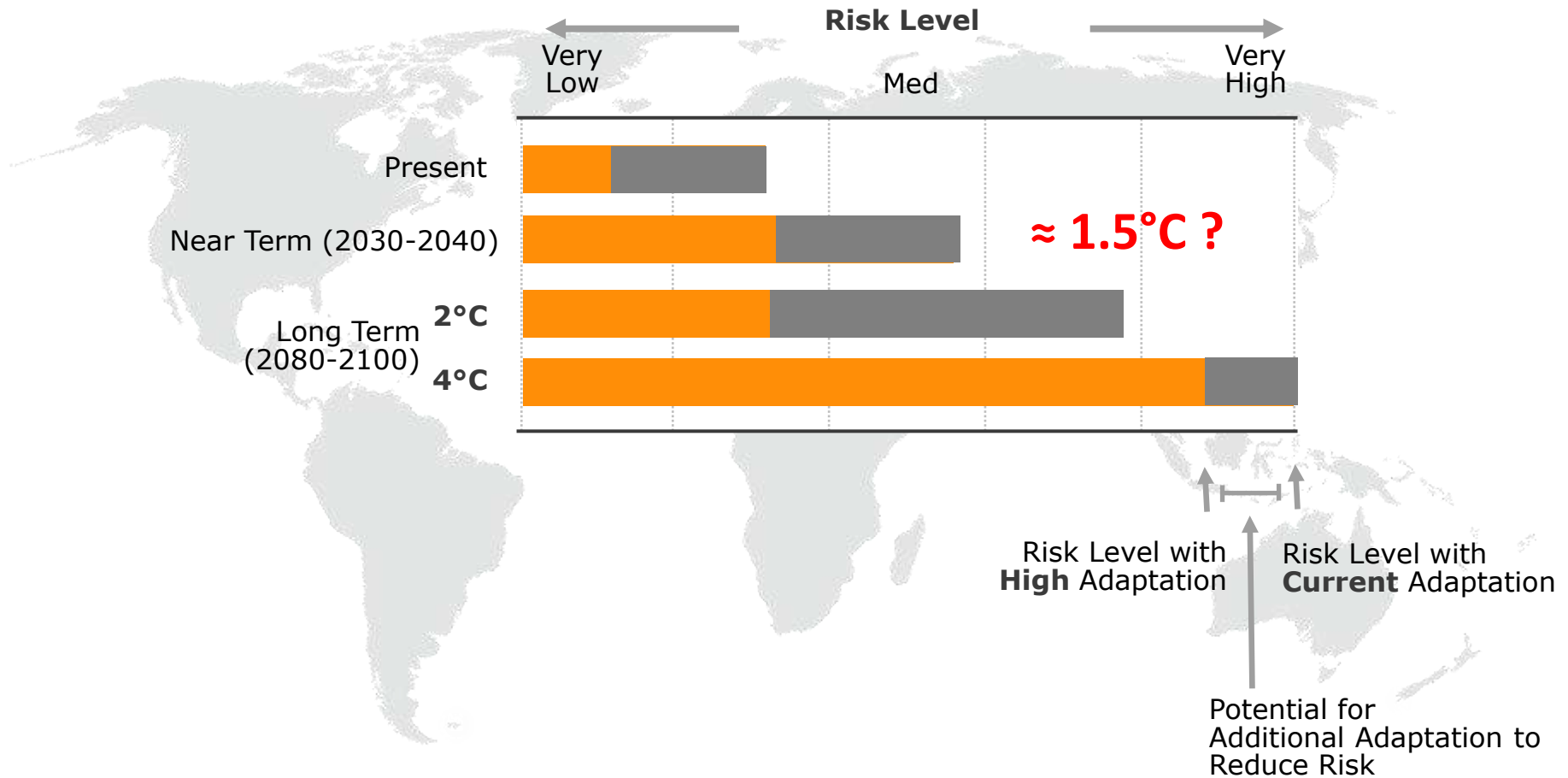
Climate change....causing risks

...which were assessed in AR5, with open questions for AR6:

1.5°C not fully covered and compared

(key risks are those relevant to article 2, UNFCCC:

“avoid dangerous anthropogenic interference with the climate system”)

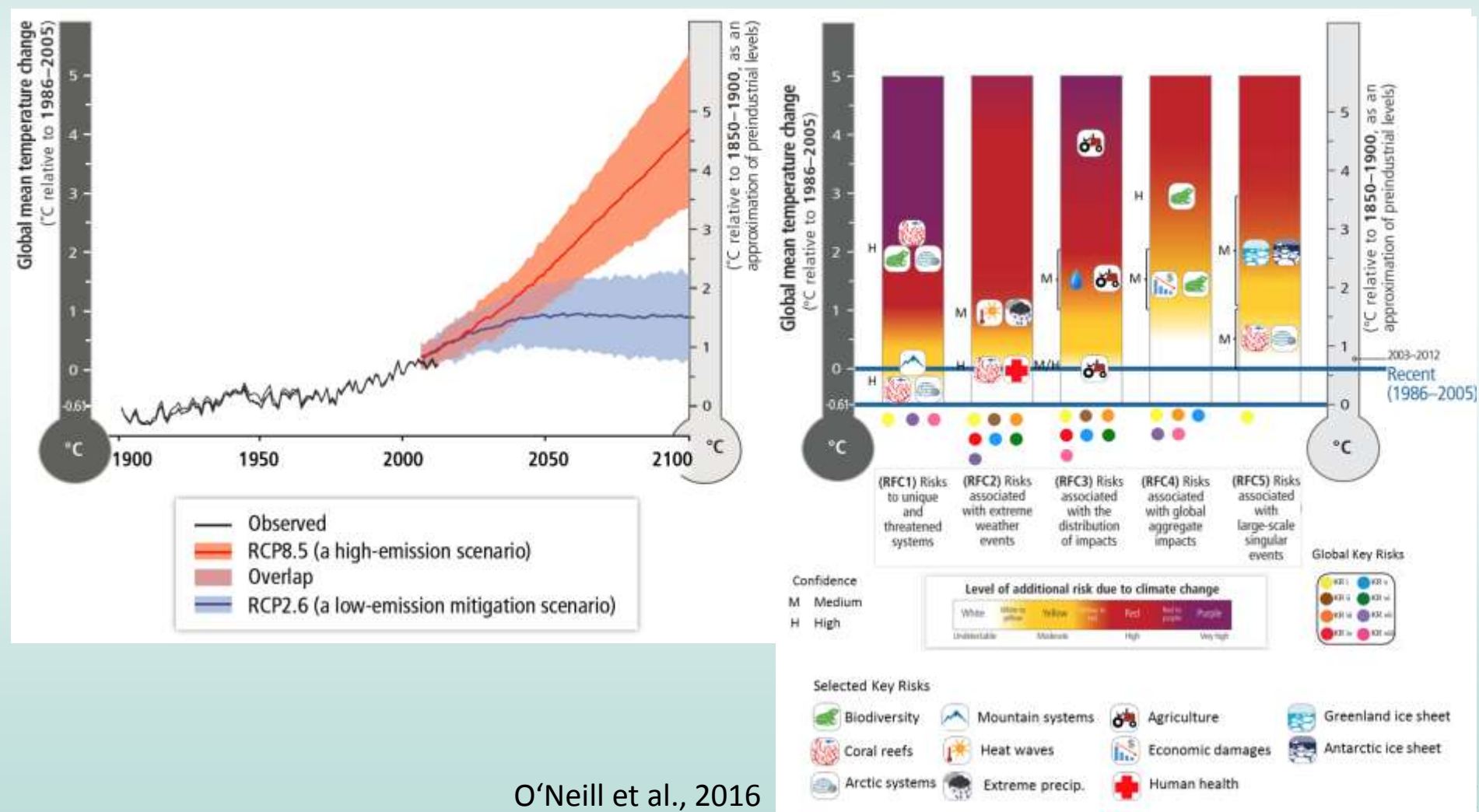


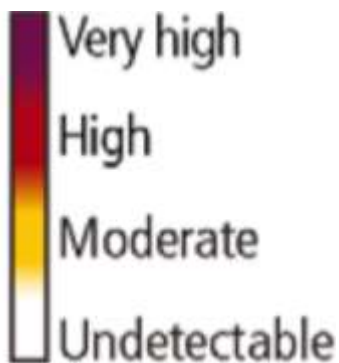
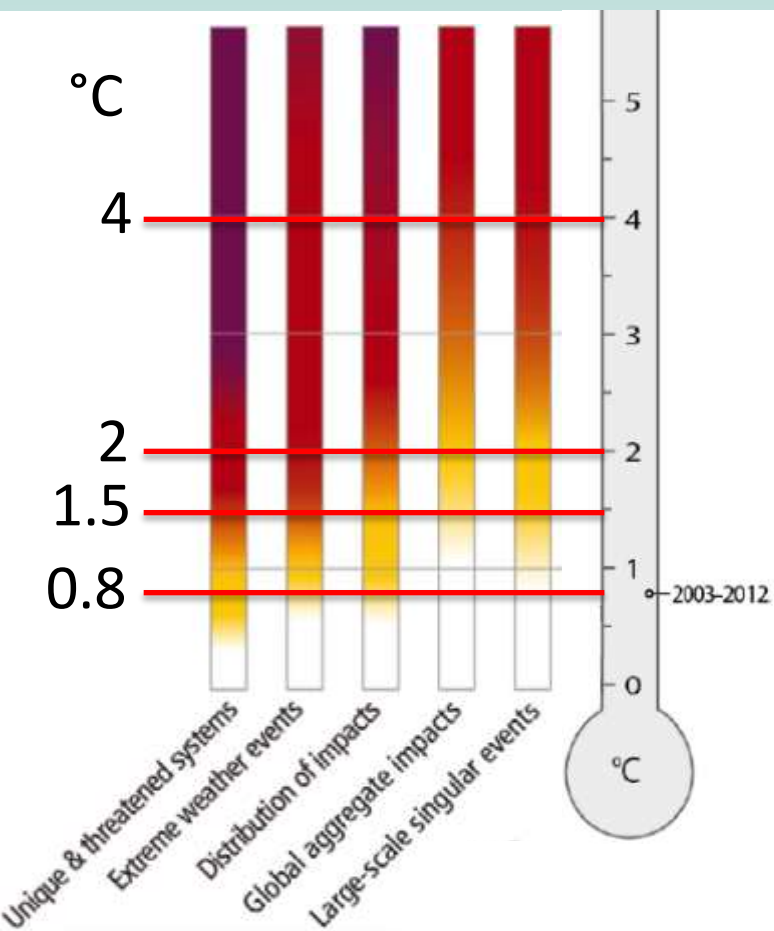
... should be complemented by Potential for Mitigation to Reduce Risk

“Burning ember diagrams”

provide a perspective on risks

...in relation to global mean temperatures





Level of additional risk due to climate change

A role for natural and human systems to guide the setting of **long-term global goals** (LTGG, relative to preindustrial), considering levels of **risk**

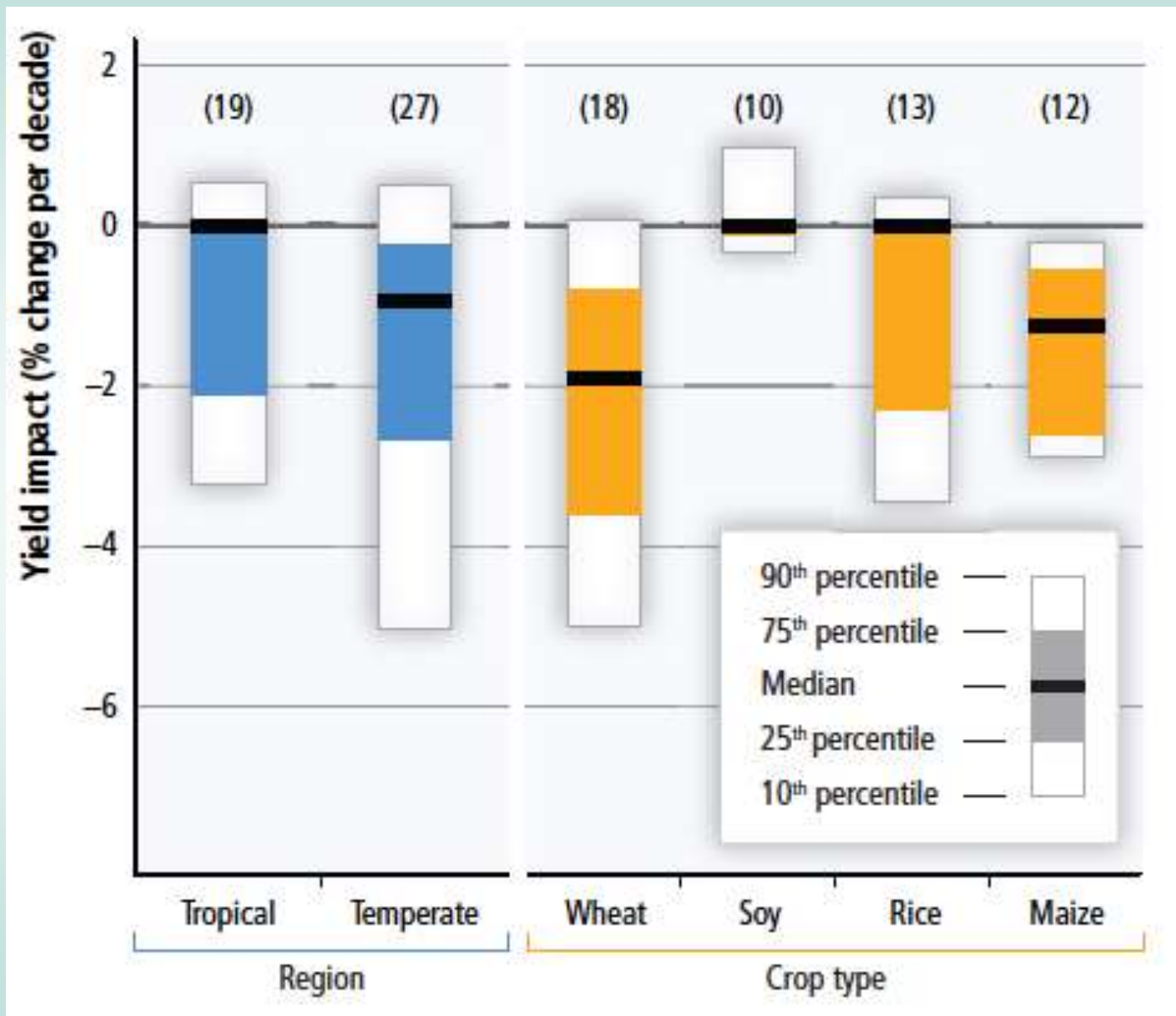
- LTGG
- 4°C
- 2°C
- 1.5°C
- 0.8°C

UNFCCC Structured Expert Dialogue, 2013 -2015:

...comparing 1.5 and 2°C, identifying... **Key risks of impacts**
Avoided impacts

Food security constrained: increase in crop production reduced

0.8°C

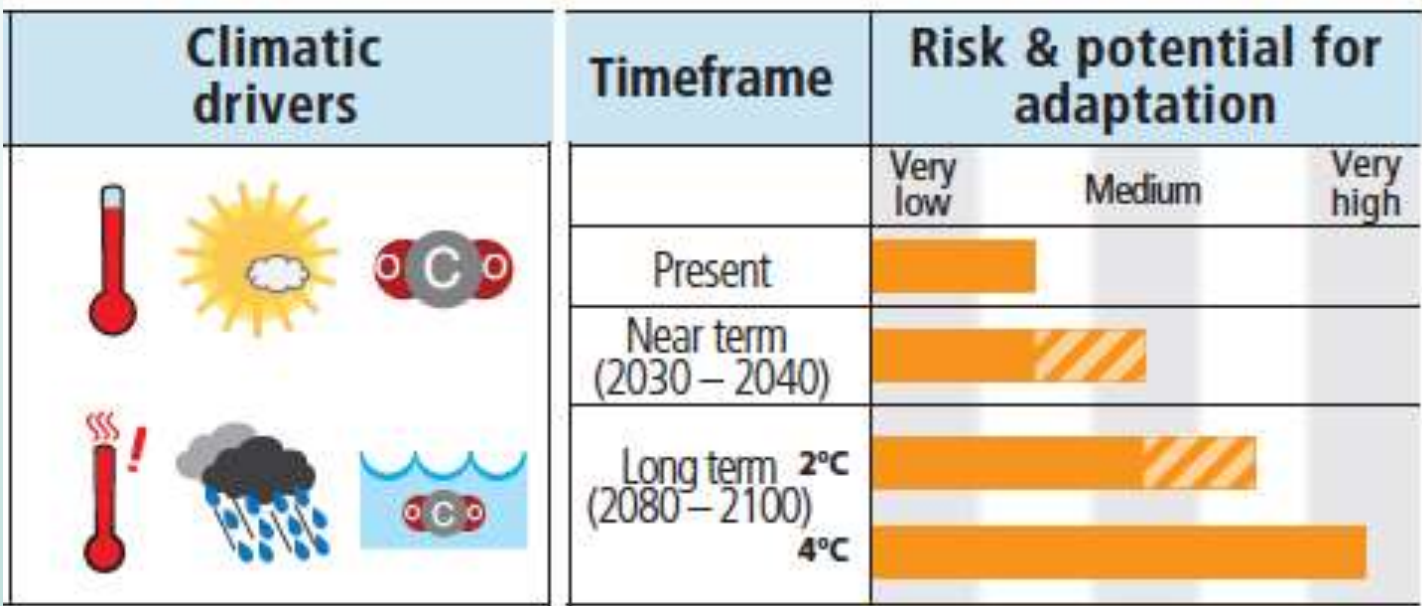


Food security constrained:

>1.5°C

>1.5°C: high risk of more severe impacts after 2050

Key risk	Adaptation issues & prospects
<p>Reductions in mean crop yields because of climate change and increases in yield variability. <i>(high confidence)</i></p> <p>[7.2, 7.3, 7.4, 7.5, Box 7-1]</p>	<p>With or without adaptation, negative impacts on average yields become likely from the 2030s with median yield impacts of 0 to -2% per decade projected for the rest of the century, and after 2050 the risk of more severe impacts increases.</p> <p>...includes effects of redistributed precipitation, heat and drought events</p>



Crop yields increasingly declining with climate change

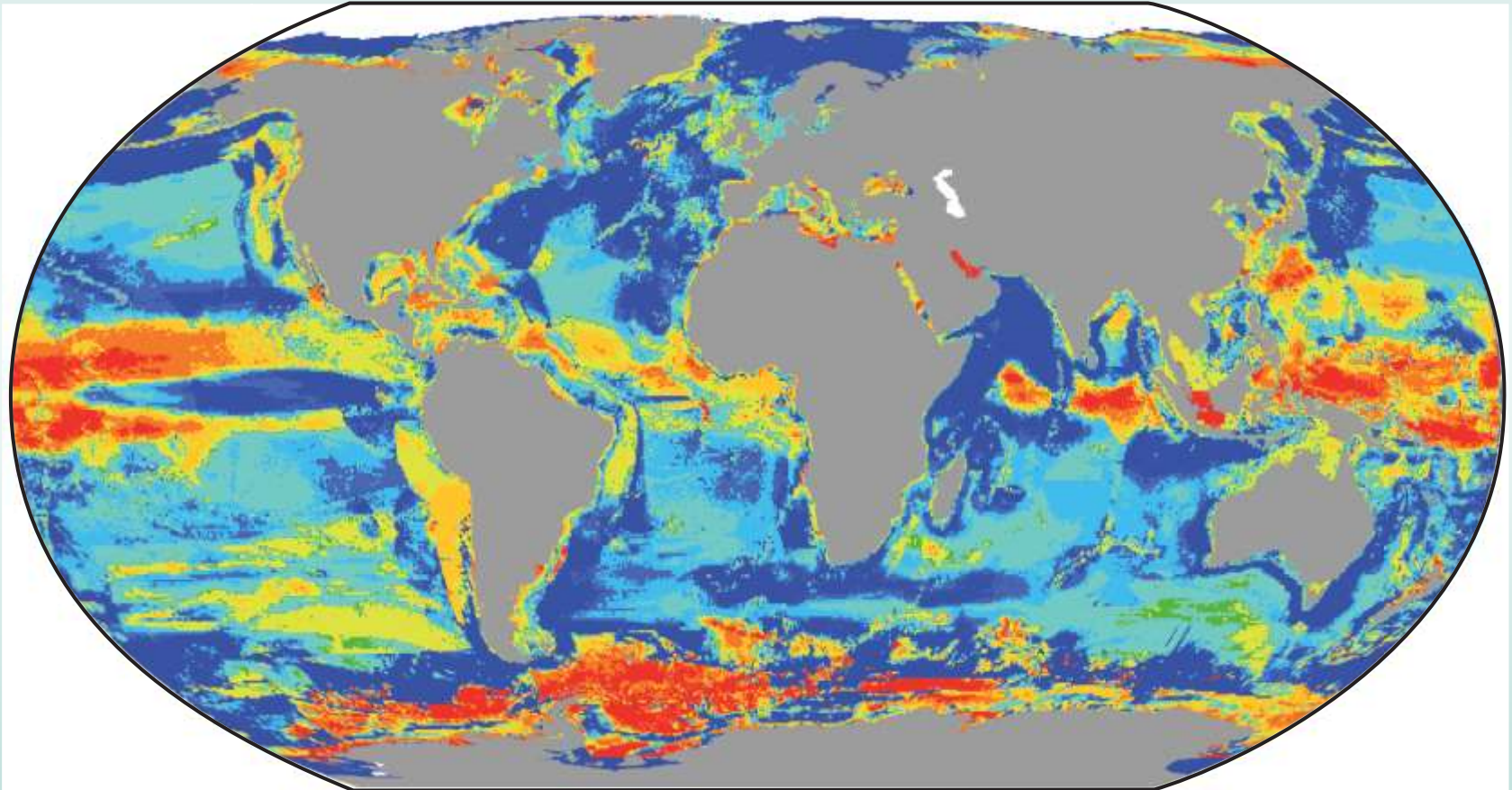
- Impacts in Vietnam : Crop and rice production
- Climate change impacts on temperature and precipitation will affect food production and food security, with a **generally negative impact on crop production** however outcomes will be regionally diverse.
- Warming temperatures have **increased the risks of heat stress to rice plants** in certain months of the year
- **Sea level rise** threatens coastal and deltaic rice production areas
 - 1m sea level rise would submerge 7% of Vietnam's agricultural land
- Negative impacts on rice crops would **exacerbate rural poverty**

Food security constrained:Fisheries

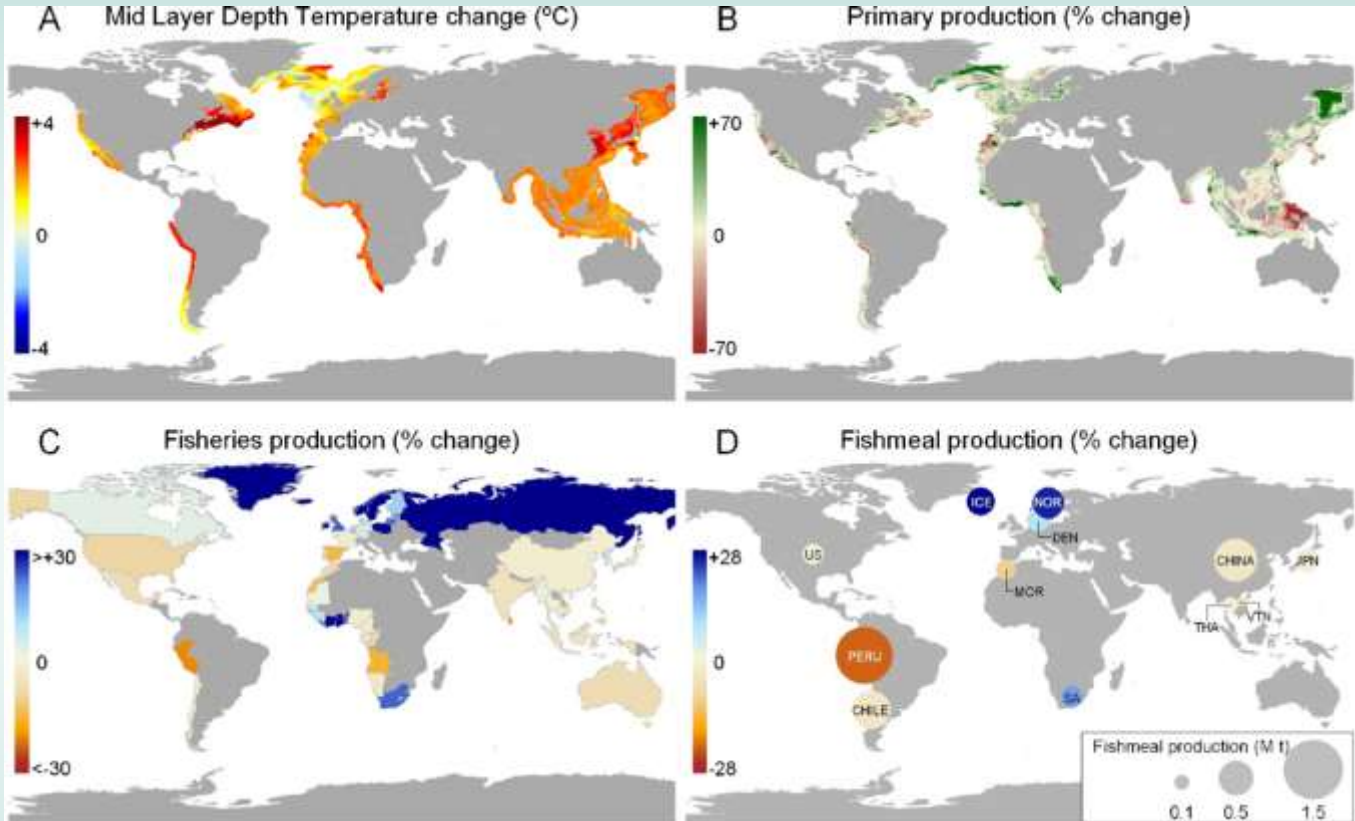
2°C

2051-60: displaced and reduced fish and invertebrate biodiversity

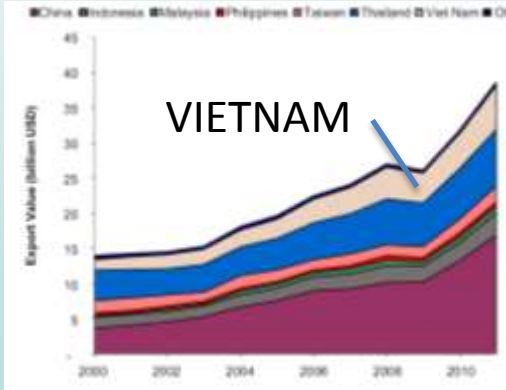
CHANGE IN MAXIMUM CATCH POTENTIAL (2051-2060 COMPARED TO 2001-2010, SRES A1B, 2°C warming of global surface T
0.7°C warmer Sea Surface T)



Constraints on fisheries in Vietnam by 2050



Decreased fisheries production and export of fishmeal → economic losses

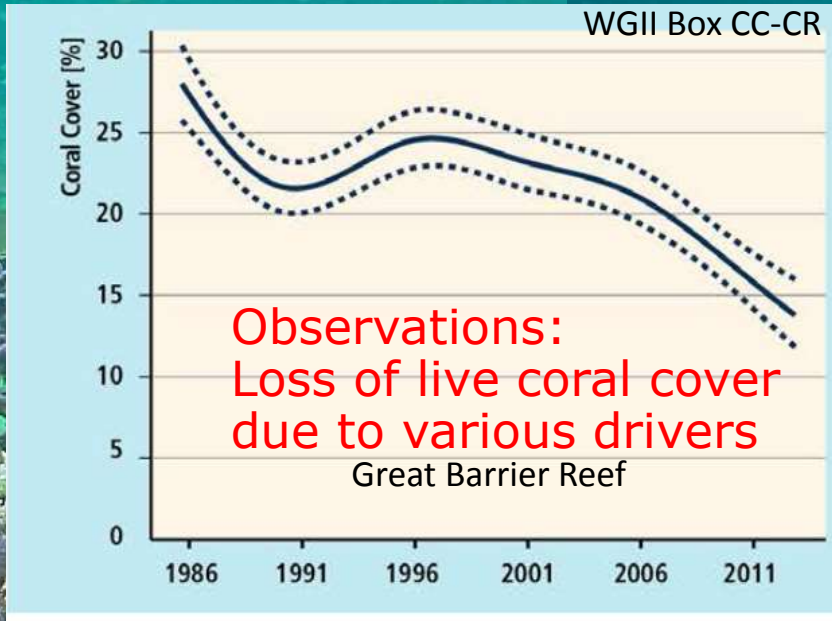


Vulnerable AND unique:

Warm water coral reefs

EXAMPLE

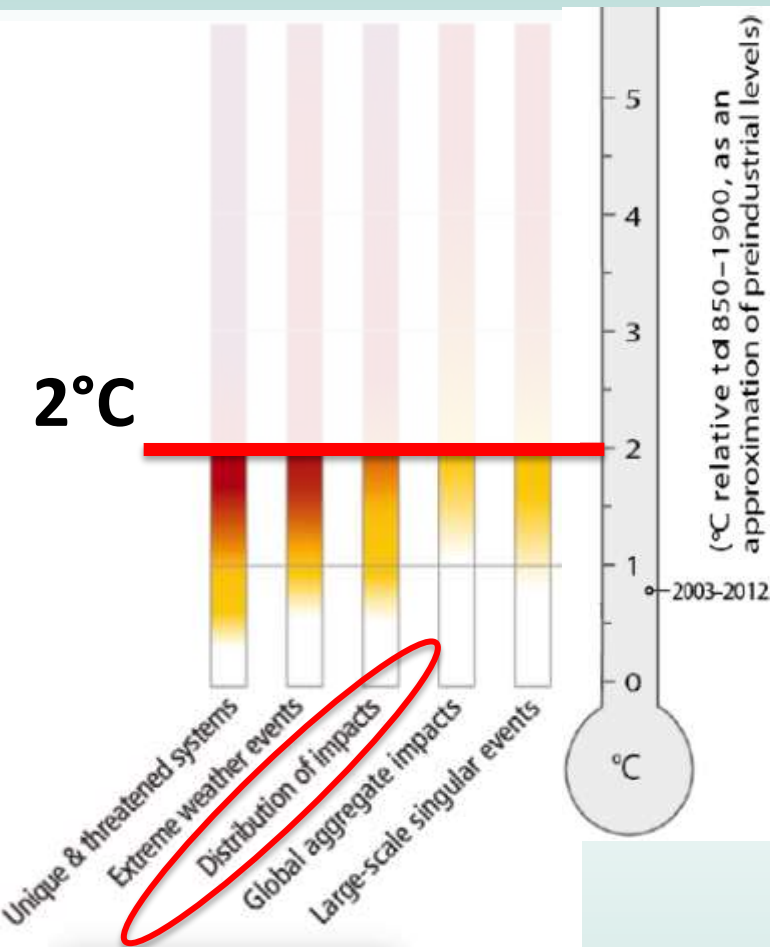
0.8°C



Verons 2009

2°C

(Unacceptable) Consequences for Sustainable (Economic) Development



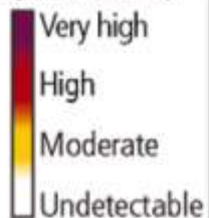
2°C

Increasingly unevenly distributed risks, esp. due to impacts on crop yields and water availability, as well as increasing inequalities

Shifts from transient to chronic poverty (social marginalization & food insecurity)

Elderly, children, the socially marginalized, and outdoor workers (farmers, construction, women securing water and firewood) disproportionately at risk from heat stress

Level of additional risk due to climate change (see box 2.4)



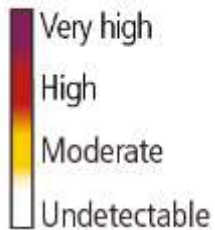


ADAPTATION

IS NECESSARY AND IS
OCCURRING

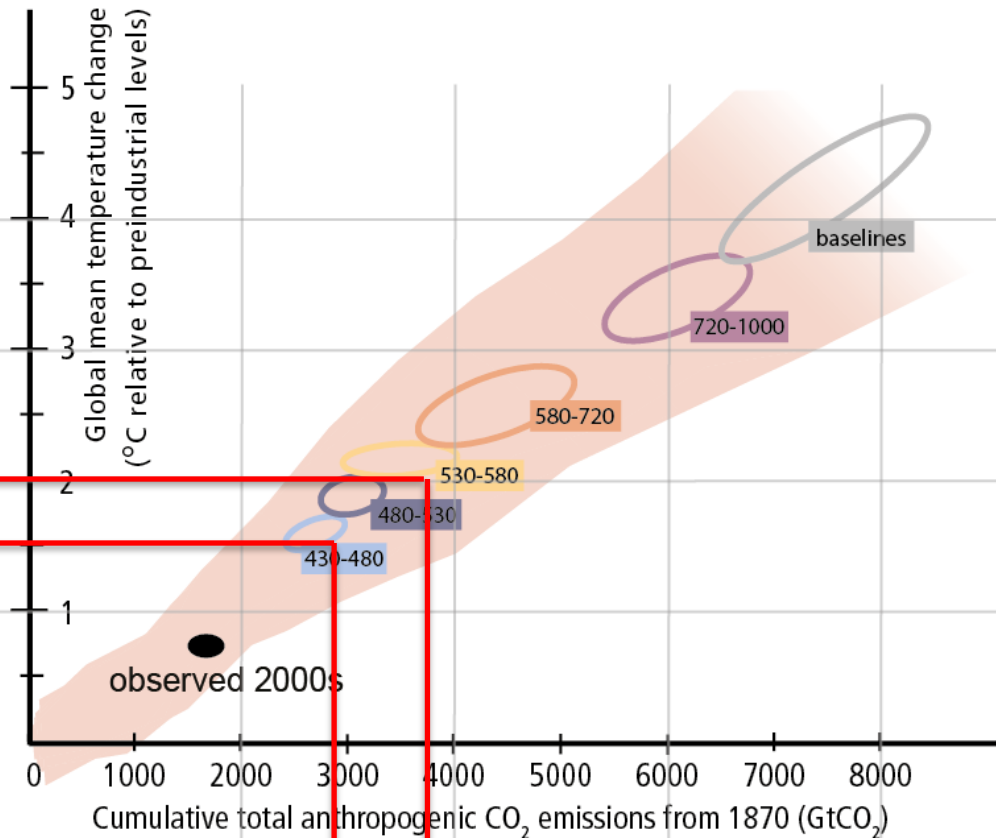
...but without
mitigation adaptation
will not be sufficient.

Level of additional risk due to climate change (see box 2.4)

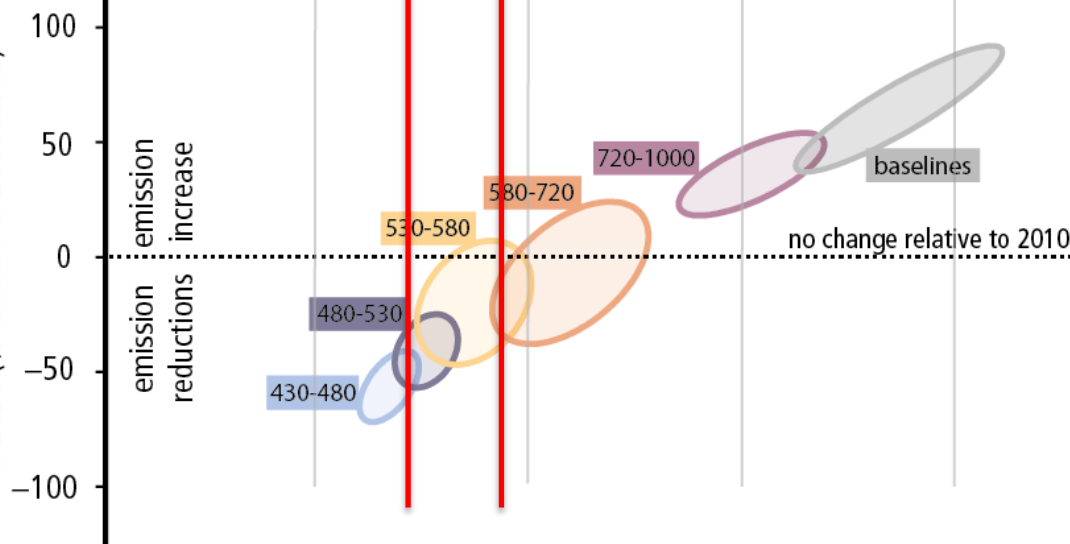


~2°C
~1.5°C

Unique & threatened systems
Extreme weather events
Distribution of impacts
Global aggregate impacts
Large-scale singular events



Change in annual GHG emissions in 2050 (% relative to 2010 levels)



Climate change risks will depend on emission changes by 2050, but also on climate sensitivity and post-2050 action.

A sense of urgency:

Overcoming societal inertia and inaction in transformation....

However, more needs to be done:

- **Strengthen the UNFCCC process.**
- **enhance and exploit the science basis of solution options:**
 - Conservation
 - Matching adaptation and ambitious mitigation
 - Sustainable development

A common response even among those who know...!?

Thank you!