


# IPCC Special Report on Global Warming of 1.5°C

**Avoided Impacts:  
Guiding AMBITION in  
mitigation and adaptation**



# Impacts of global warming 1.5°C: Where should we go?

At 1.5°C compared to 2°C:

- Less extreme weather where people live, including extreme heat and rainfall
- By 2100, global mean sea level rise will be around 10 cm lower but may continue to rise for centuries
- 10 million fewer people exposed to risk of rising seas (...less coastal ecosystems exposed)

Jason Florio / Aurora Photos



# Where do we want to go?

At 1.5°C compared to 2°C:

- Lower impact on biodiversity and species
- Smaller reductions in yields of maize, rice, wheat crop yields
- Global population exposed to water shortages is up to 50% less (also less water shortages for ecosystems)



Andre Seale / Aurora Photos



# Where do we want to go?

At 1.5°C compared to 2°C:

- Lower risk to fisheries & the livelihoods that depend on them
- Up to several hundred million fewer people exposed to climate-related risk and susceptible to poverty by 2050



Natalie Behring / Aurora Photos





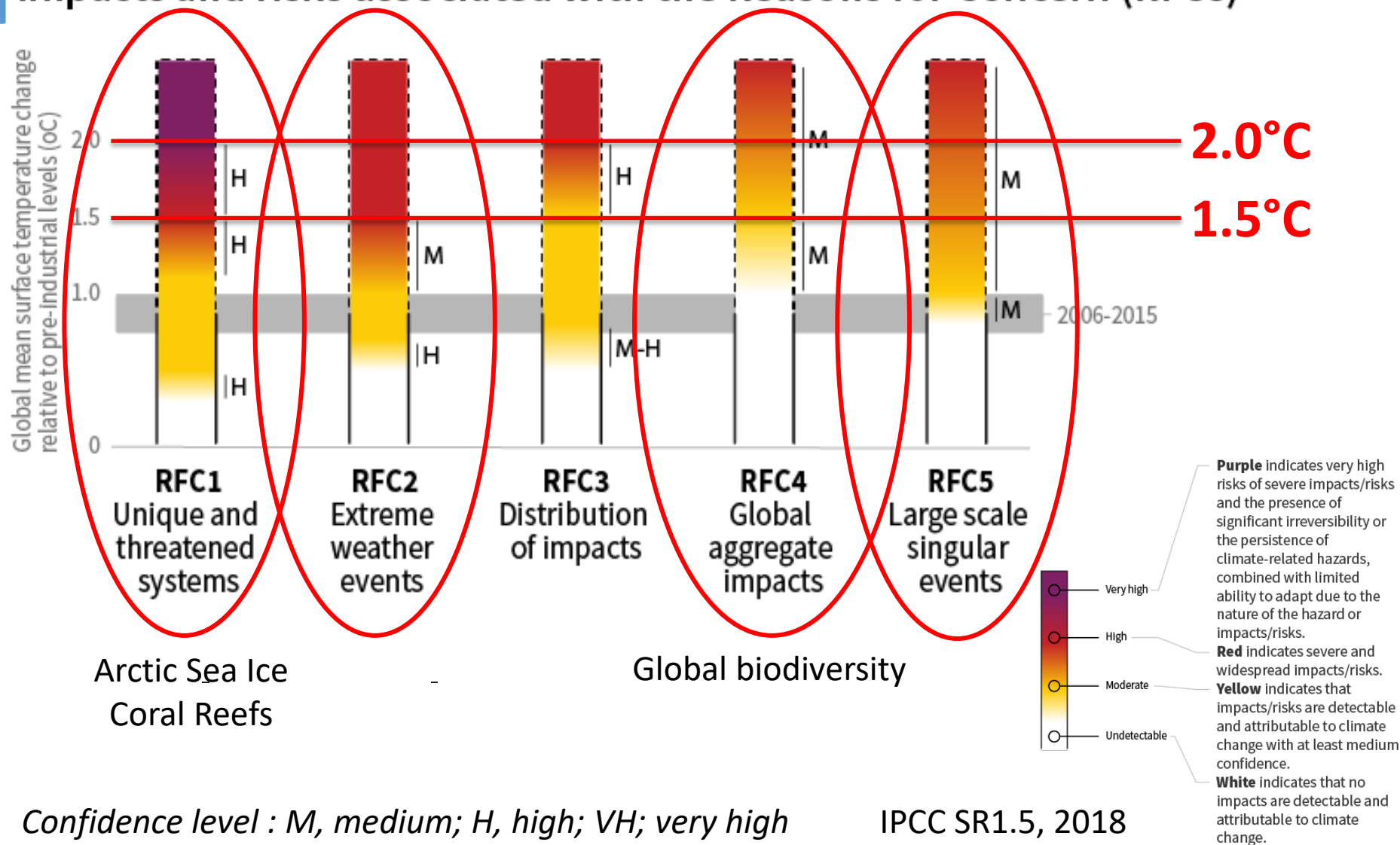
# Where do we want to go?

At 1.5°C compared to 2°C:

- Disproportionately high risk for Arctic, dryland regions, small island developing states and least developed countries
- Lower risks for health, livelihoods, food security, water supply, human security and economic growth
- A wide range of adaptation options can reduce climate risks; less adaptation needs at 1.5°C

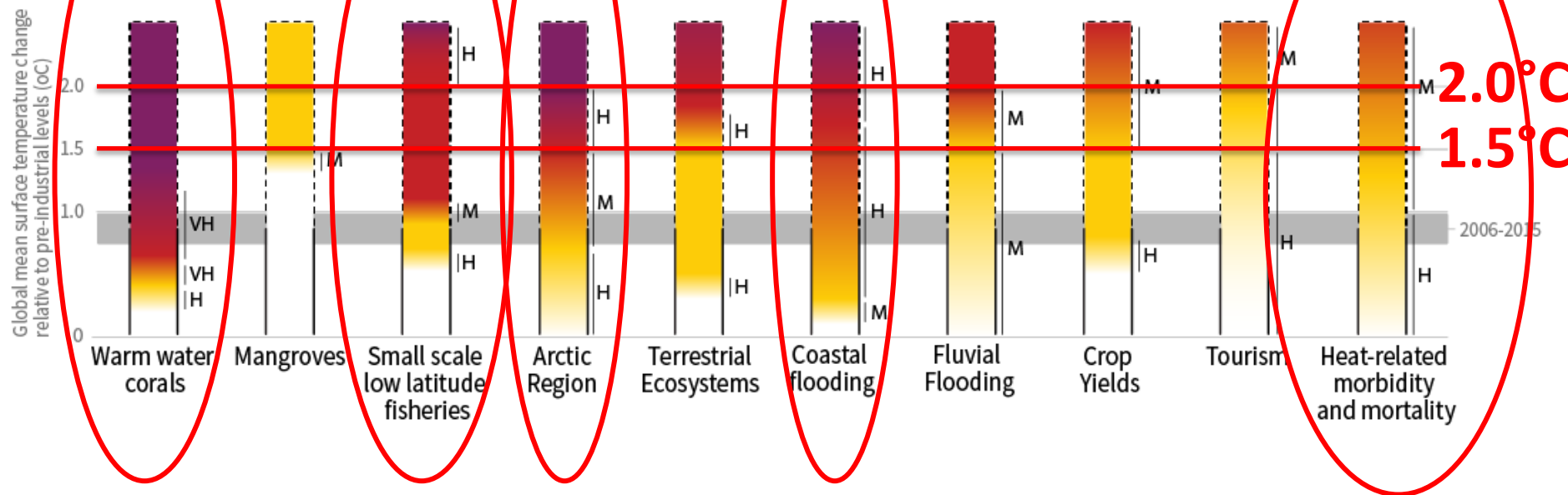
Jason Florio / Aurora Photos

# Impacts and risks associated with the Reasons for Concern (RFCs)



*....half a degree matters... every bit of warming matters....  
... for ecosystems, biodiversity and humankind*

## Impacts and risks for selected natural, managed and human systems



**...less loss and damage at 1.5°C**

Confidence level : M, medium; H, high; VH; very high

IPCC SR1.5, 2018

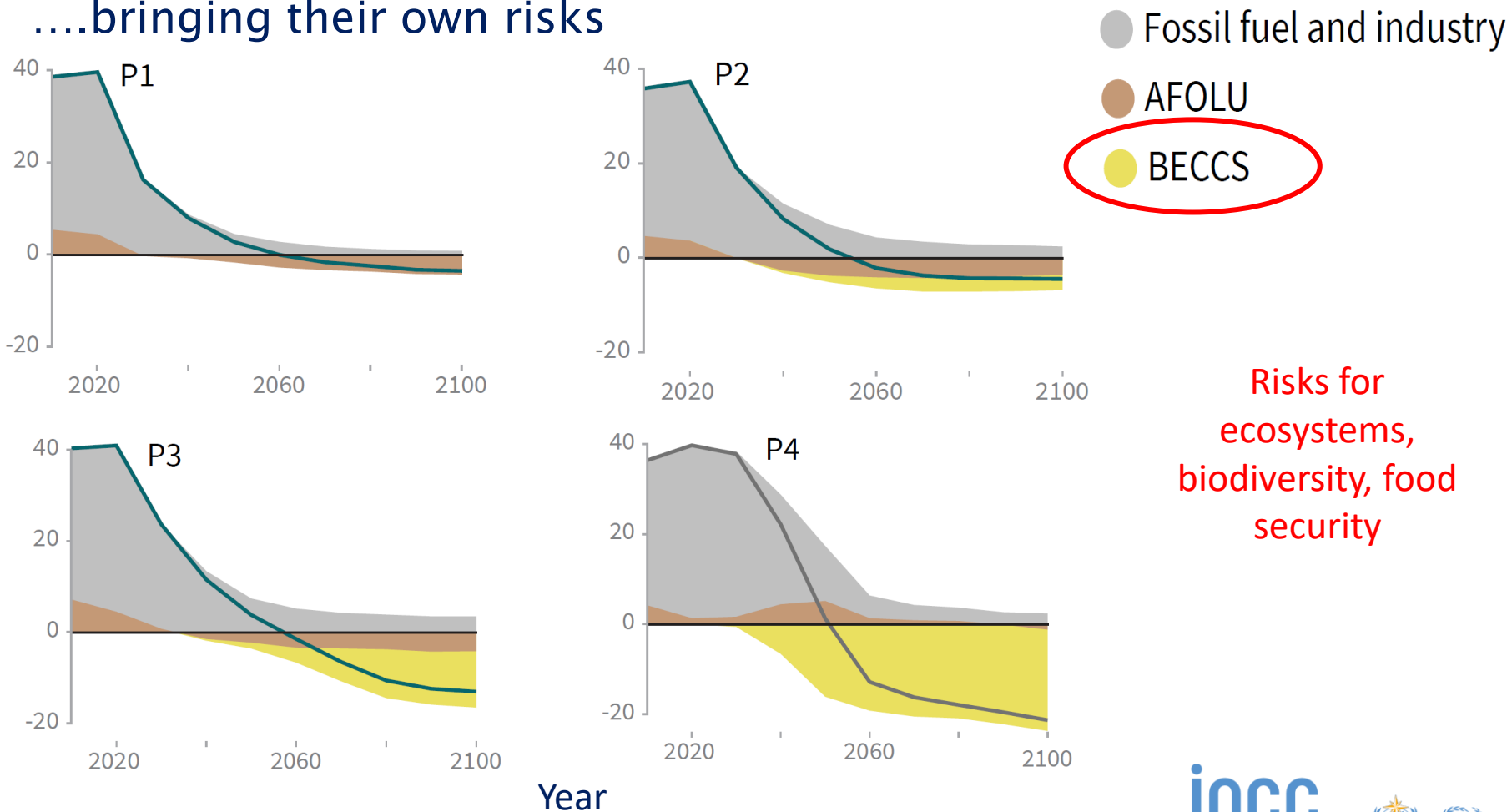
**ipcc**

INTERGOVERNMENTAL PANEL ON climate change

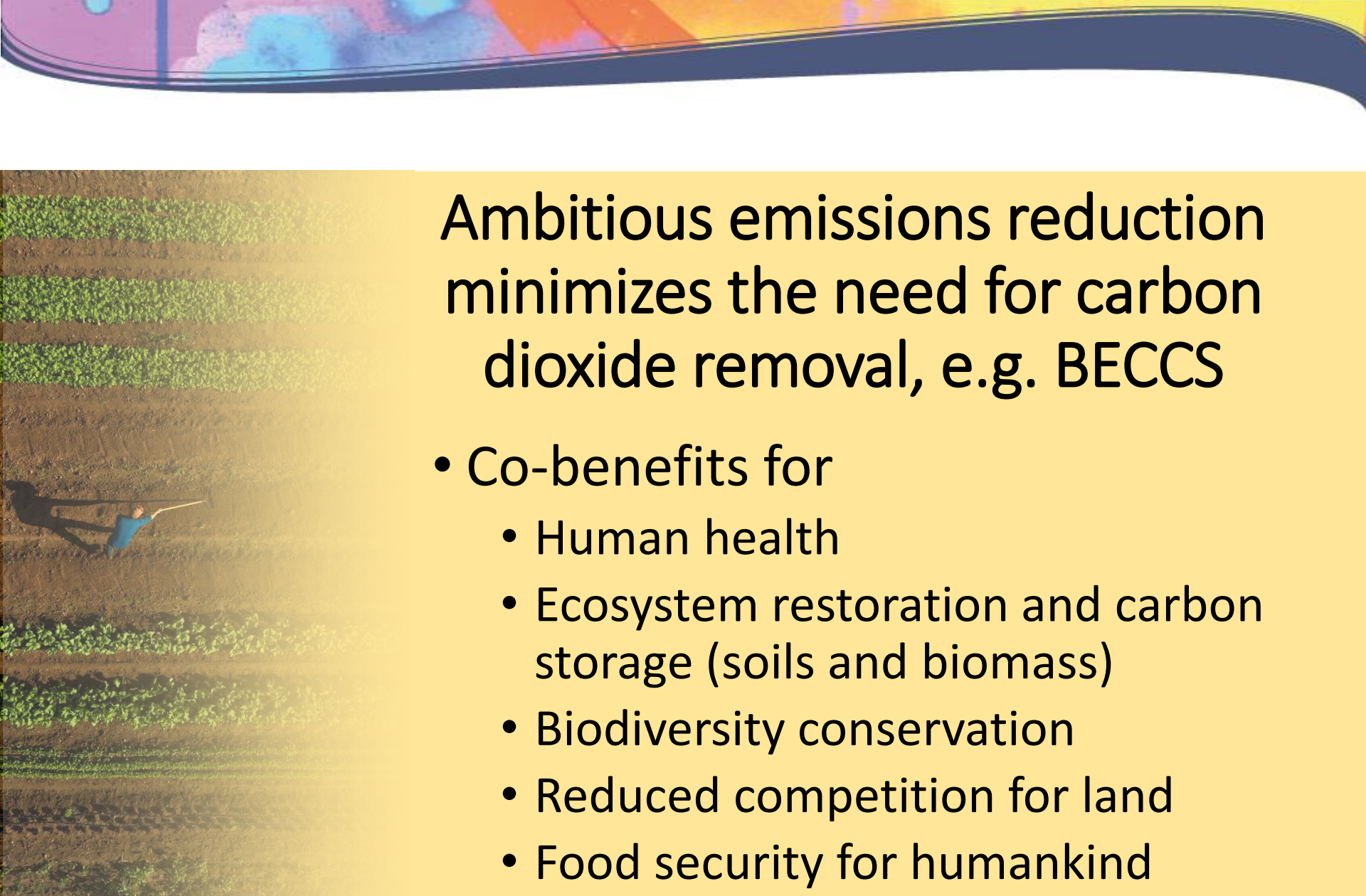


Different pathways and mitigation strategies could limit global warming to 1.5°C, variable needs for negative emission technologies

....bringing their own risks







# Ambitious emissions reduction minimizes the need for carbon dioxide removal, e.g. BECCS

- Co-benefits for
  - Human health
  - Ecosystem restoration and carbon storage (soils and biomass)
  - Biodiversity conservation
  - Reduced competition for land
  - Food security for humankind

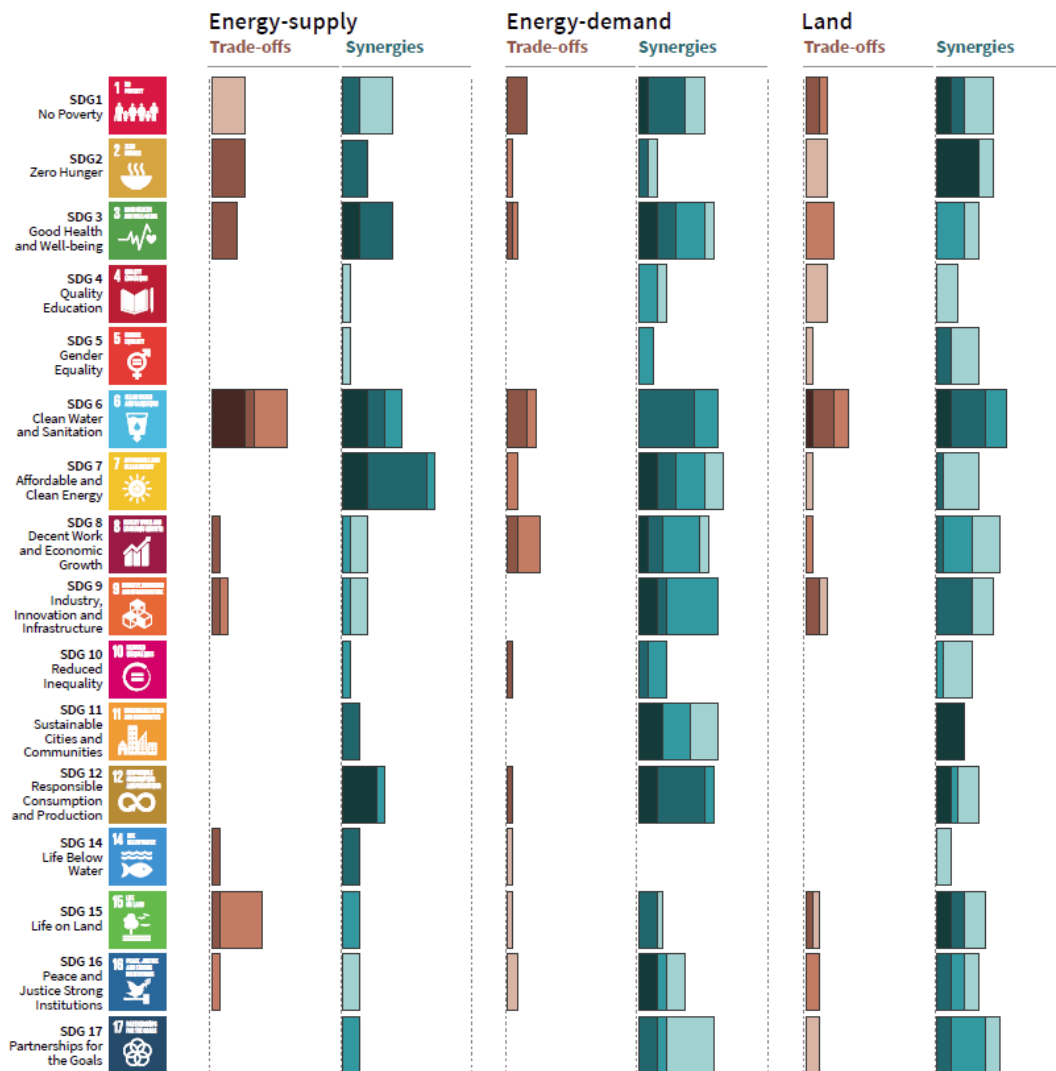


# SUSTAINABLE DEVELOPMENT GOALS



## 1.5°C facilitates reaching SDGs

# Indicative linkages between mitigation and sustainable development using SDGs (the linkages do not show costs and benefit)

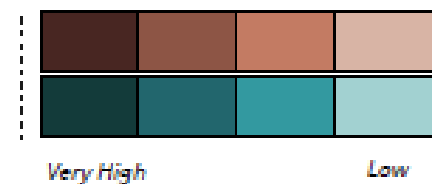


## 1.5°C linked to reaching SDGs

Length shows strength of connection

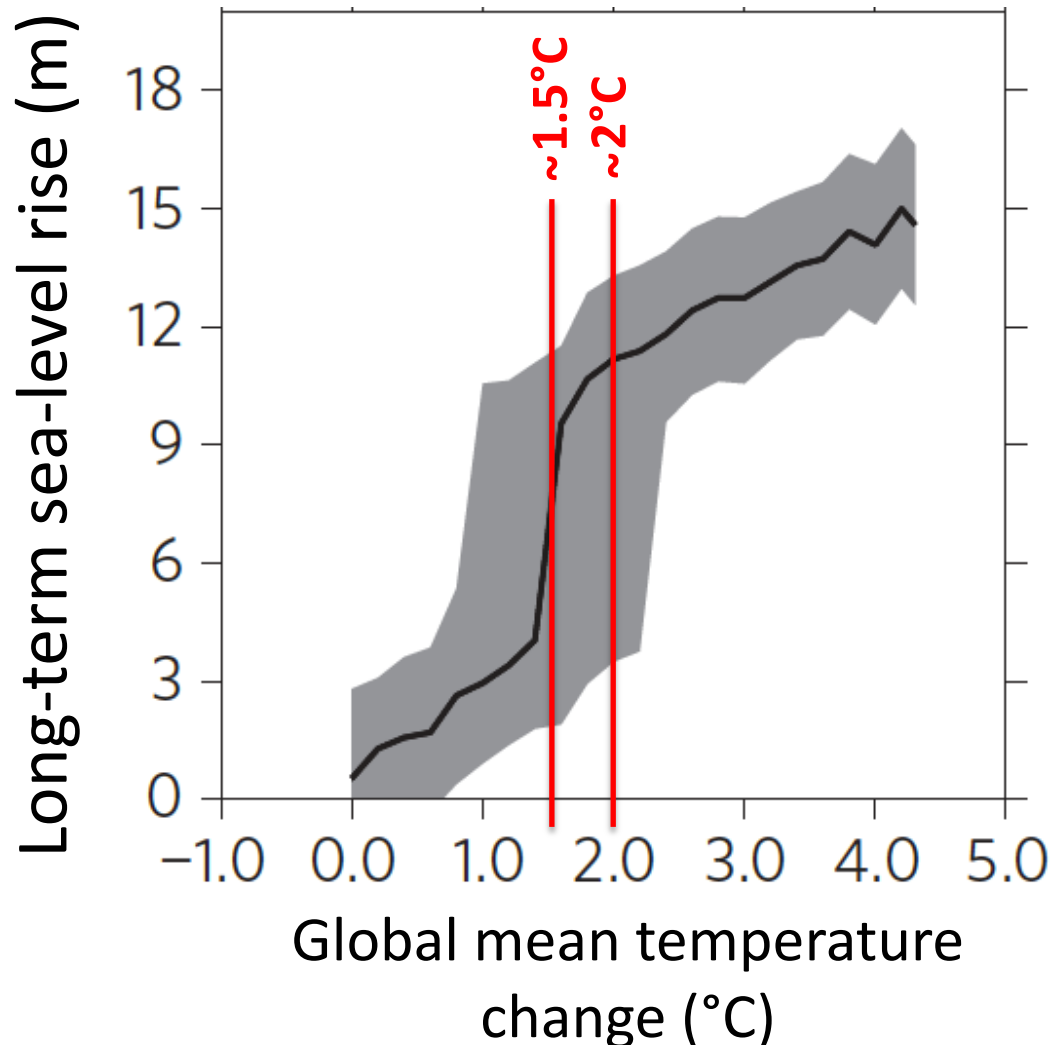


Shades show level of confidence



HOWEVER, irreversible sea level rise beyond 2100 may be triggered by surpassing a tipping point at 1.5 - 2°C

...emphasizing high ambition mitigation



...affecting habitat, freshwater resources, human society through flood events


**Coming close to Paleo-findings....**

**5-9 m** : ...during the last interglacial (Eemian, 125.000 ya, at 0.7-2°C above pre-industrial)

**>7m** : ...last time when the atmosphere had 400 ppm CO<sub>2</sub> (in Pliocene, 3-5 Mya)

Knutti et al., Ngeo 2015

TO BE ASSESSED FURTHER IN AR6



*Half a degree... every bit  
of warming matters*

*Each year matters*

*Each choice matters*

Ashley Cooper/ Aurora Photos



# The Paris agreement provides a sense of urgency: Overcoming societal inertia, political paralysis and inaction in transformation....



A common response even  
among those who (should)  
know...!?

## Feasibility at various levels:

- Keeping warming to 1.5 according to the laws of chemistry and physics ---- **yes**
- Technologies to support mitigation and adaptation measures ---- **yes**
- Redirection of financial flows ---- **yes**  
(stopping fossil fuel subsidies)
- Informed policy leading and directing societal transformation ---- **may be .....**?

**BOTTLE NECK**

# Thank you for your attention

## For more information:

Website: <http://ipcc.ch/>

IPCC Secretariat: [ipcc-sec@wmo.int](mailto:ipcc-sec@wmo.int)

IPCC Press Office: [ipcc-media@wmo.int](mailto:ipcc-media@wmo.int)

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