

SR1.5, October 2018

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INTERGOVERNMENTAL PANEL ON climate change

Global Warming of 1.5°C

An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty



Summary for Policymakers

WG I | WG II | WG III

WHO | UNEP

SRCL, August 2019

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Climate Change and Land

An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems



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SROCC, September 2019

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The Ocean and Cryosphere in a Changing Climate

Special Report of the Intergovernmental Panel on Climate Change



Summary for Policymakers

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WGII: Avoiding Impact (Severity) guiding AMBITION in Mitigation and Adaptation
Hans-O. Pörtner, Co-Chair IPCC WGII AR6

IPCC 6th Assessment Cycle: 3 Special Reports released between October 2018 and September 2019

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Ashley Cooper / Aurora Photos

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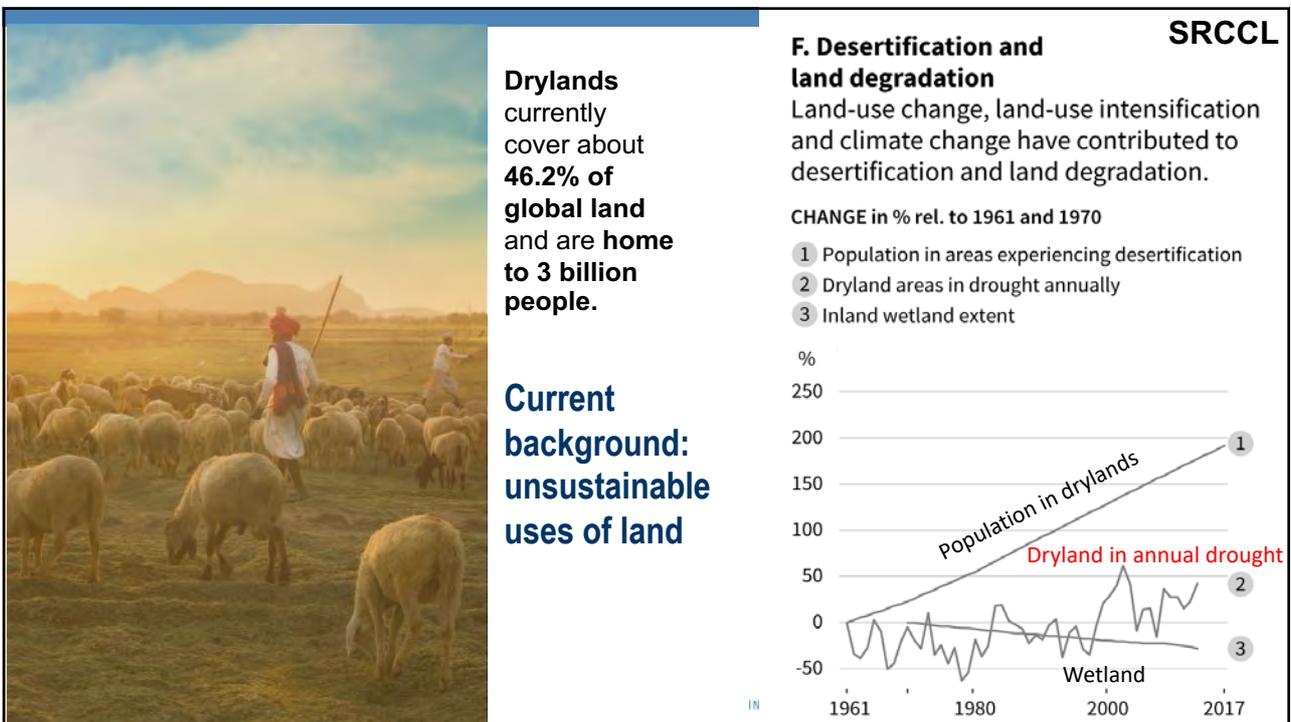
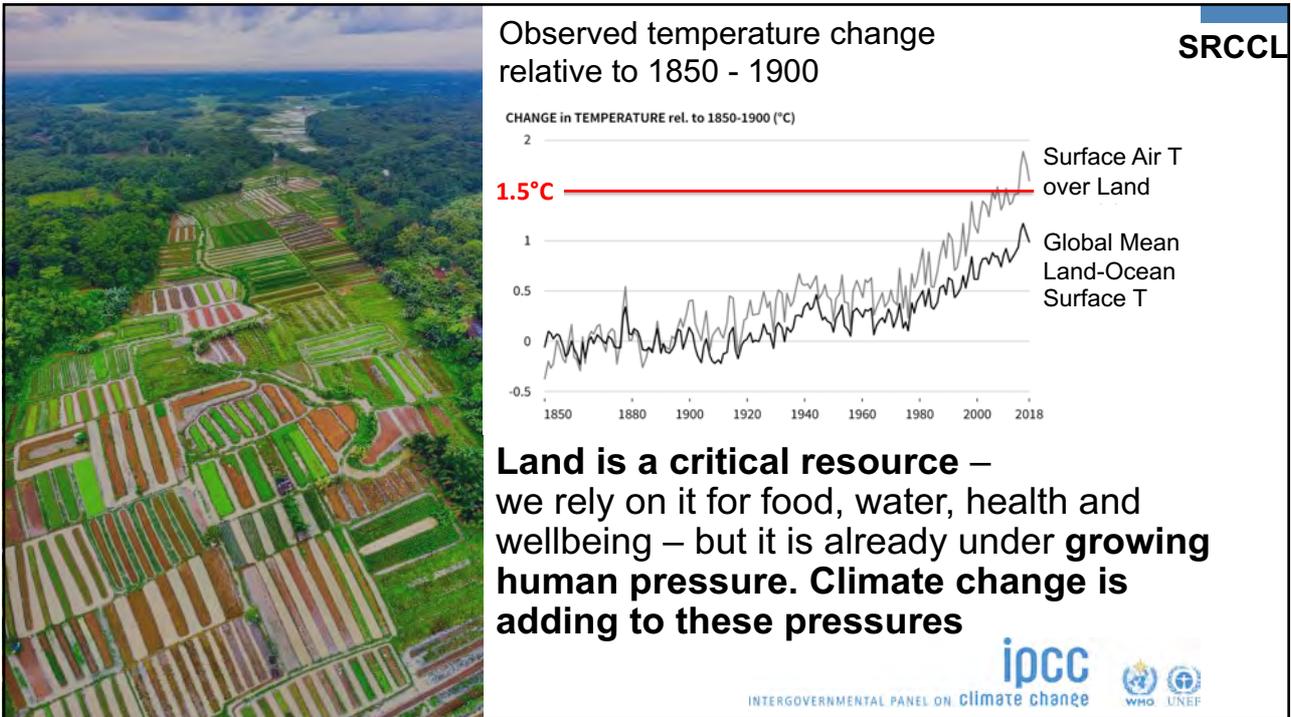
Where are we?

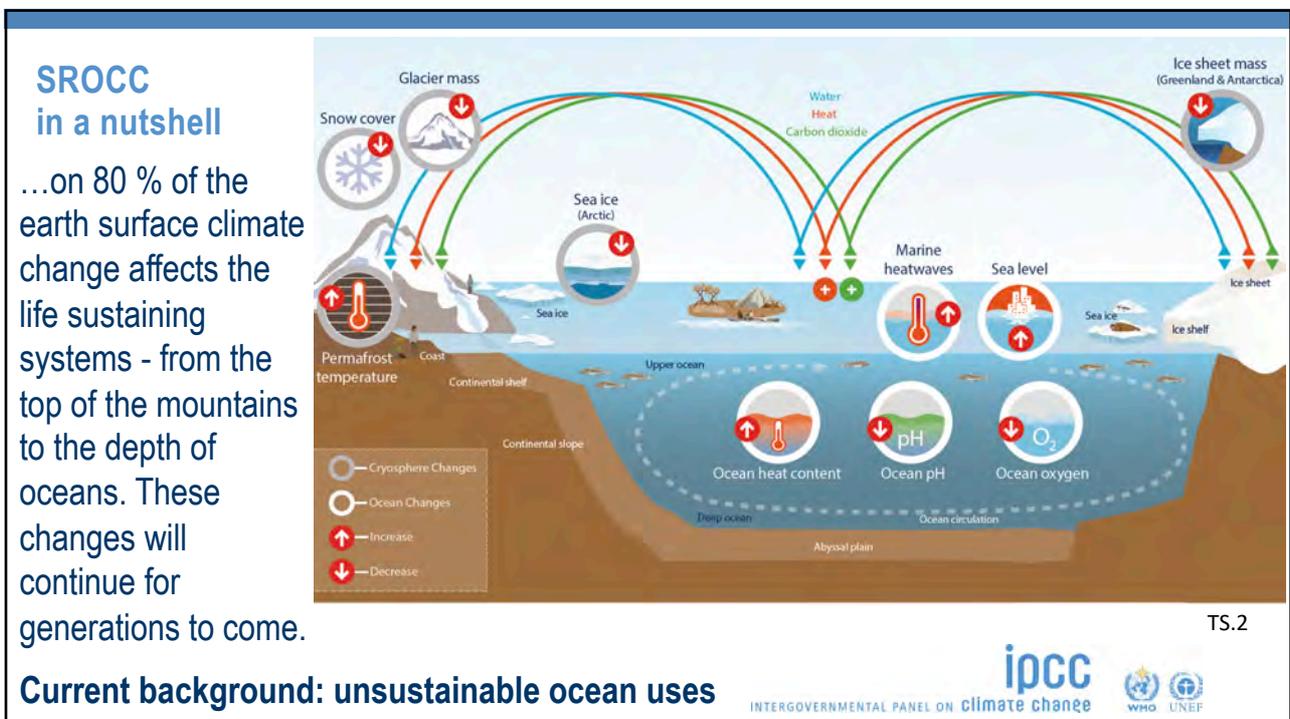
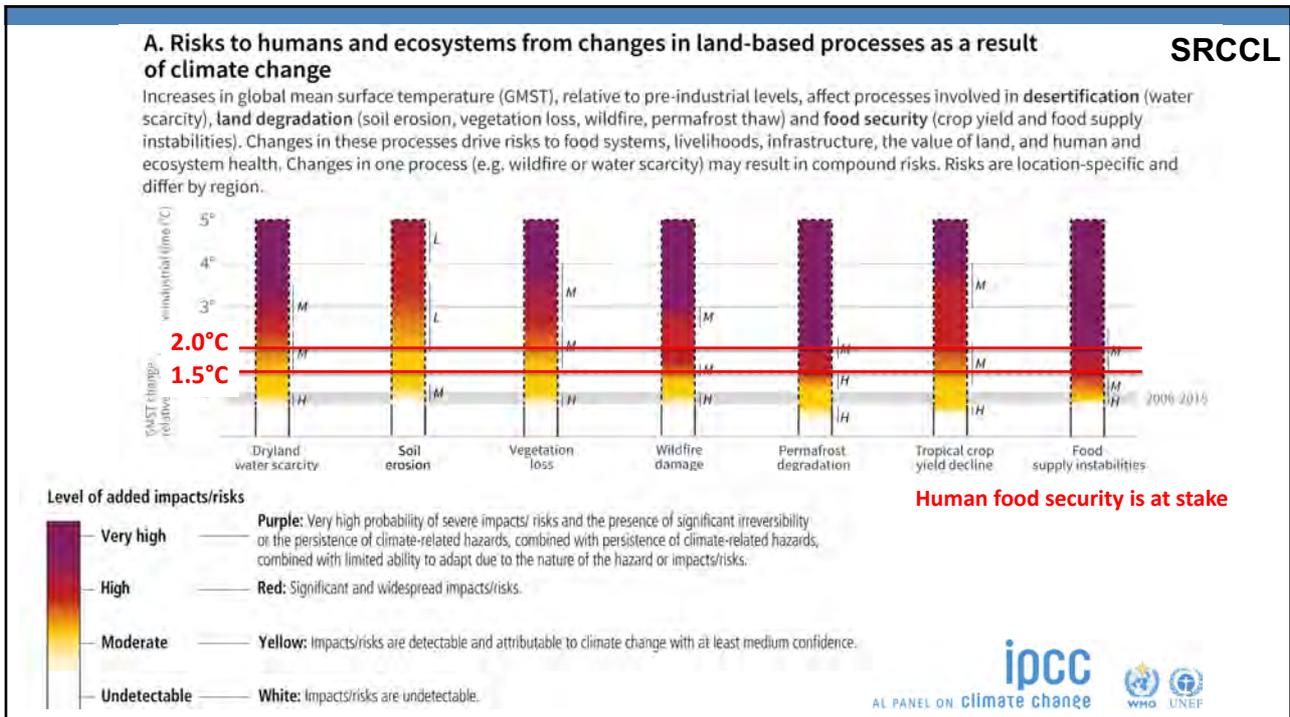
Since pre-industrial times, human activities have caused approximately **1.0°C of global warming**.

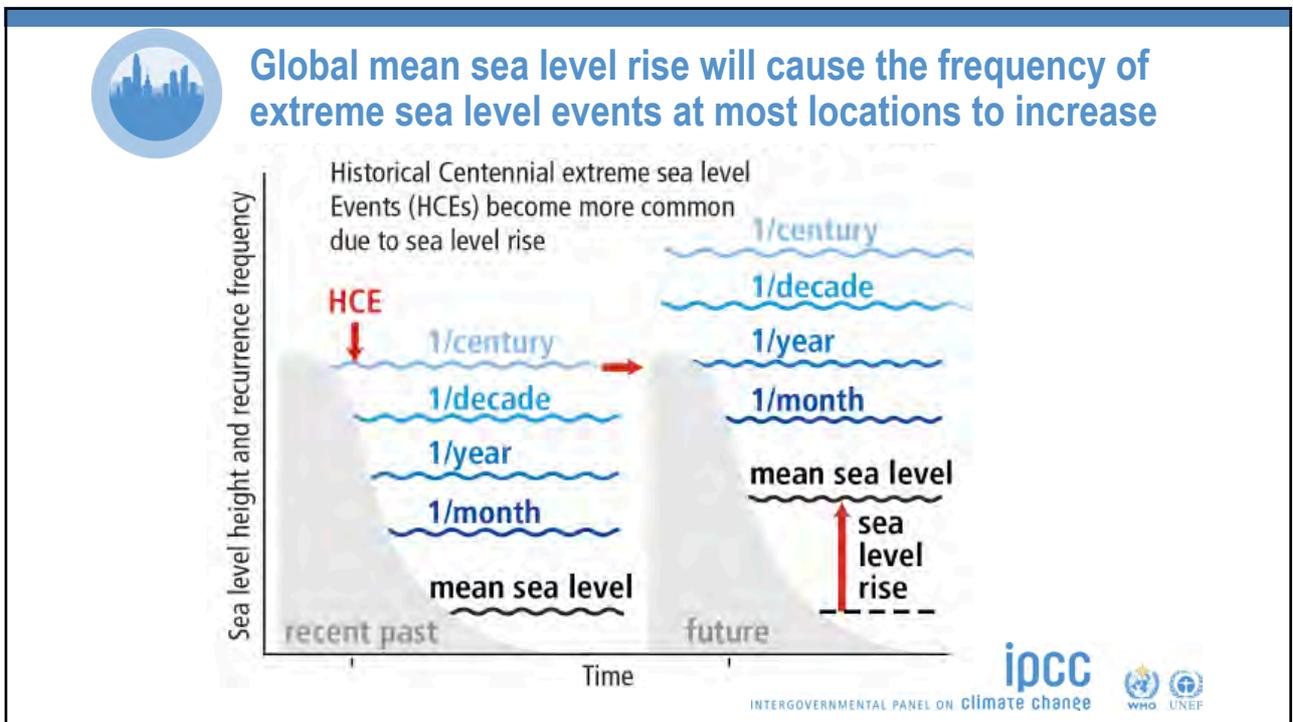
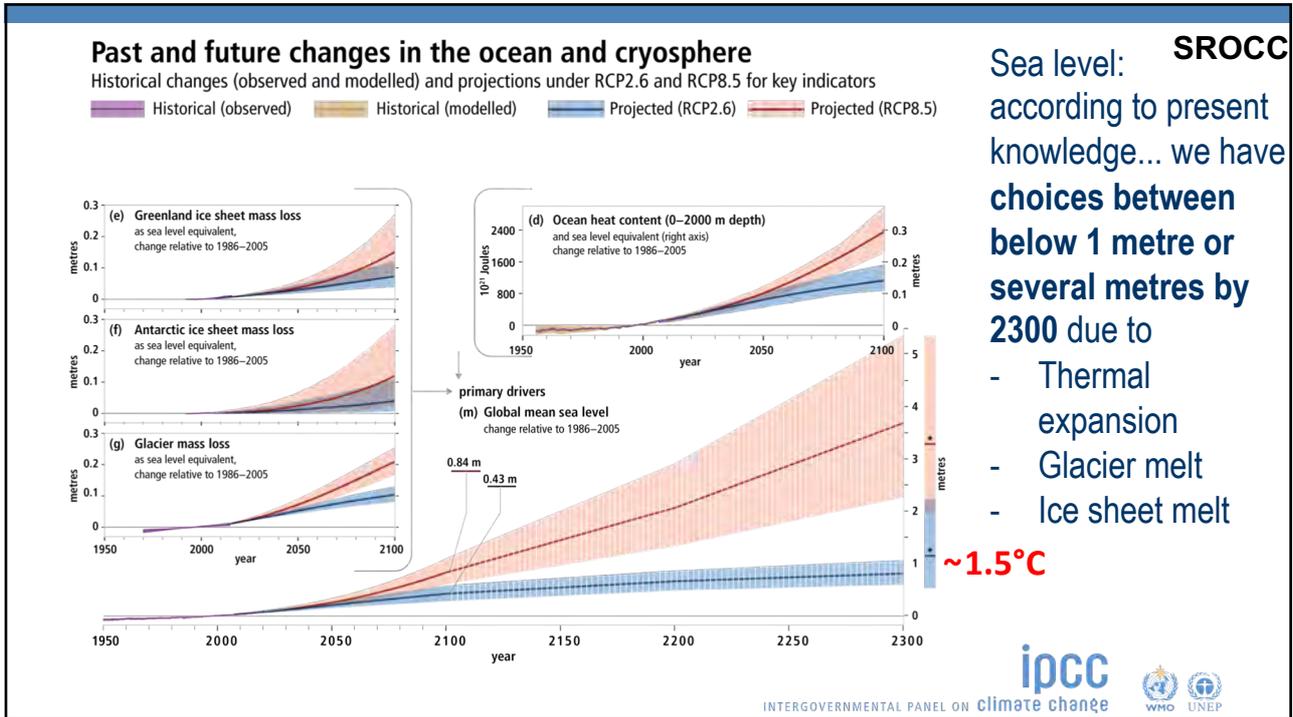
- Already seeing **consequences for people, nature and livelihoods**
- At current rate, would **reach 1.5°C between 2030 and 2052**
- **Past emissions alone do not commit the world to 1.5°C**

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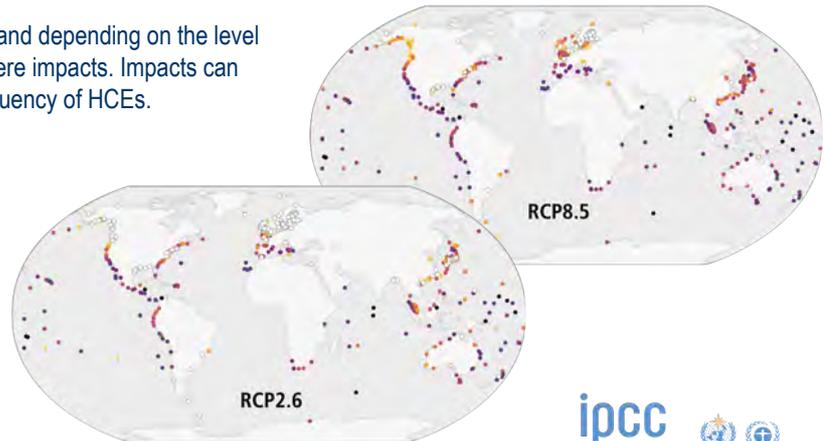
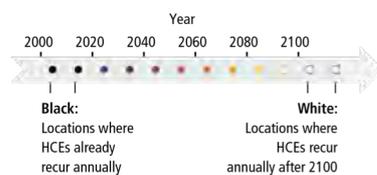




Extreme sea level events

Year when HCEs are projected to recur once per year on average

- Due to projected global mean sea level (GMSL) rise, local sea levels that historically occurred once per century (historical centennial events, HCEs) are projected to become at least annual events at most locations during the 21st century.
- The height of a HCE varies widely, and depending on the level of exposure can already cause severe impacts. Impacts can continue to increase with rising frequency of HCEs.



SPM Figure 4b

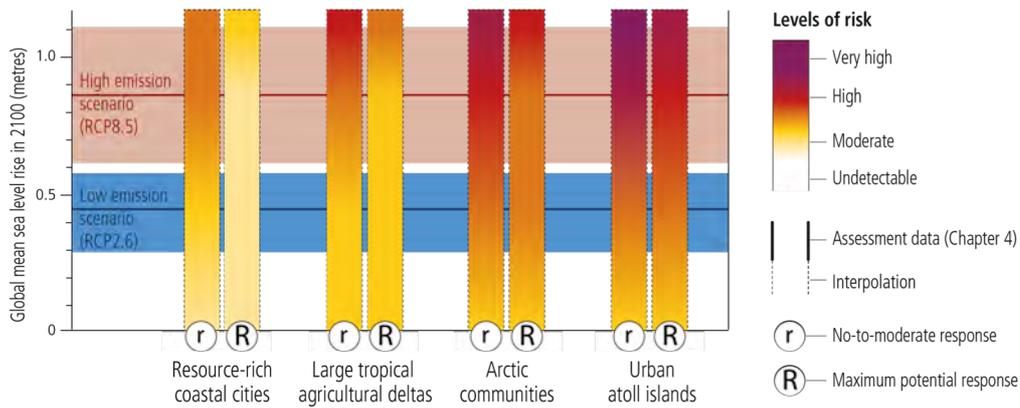


Sea level rise and coastal extremes

- During the 20th century, the global mean sea level rose by about **15cm**.
- Sea level is currently rising **more than twice as fast** and will further **accelerate** reaching up to 1.10m in 2100 and several metres in 2300 if emissions are not sharply reduced.
- **Extreme sea level events** which now occur rarely during high tides and intense storms **will become more common**.

Risk in 2100 under different sea level rise and response scenarios

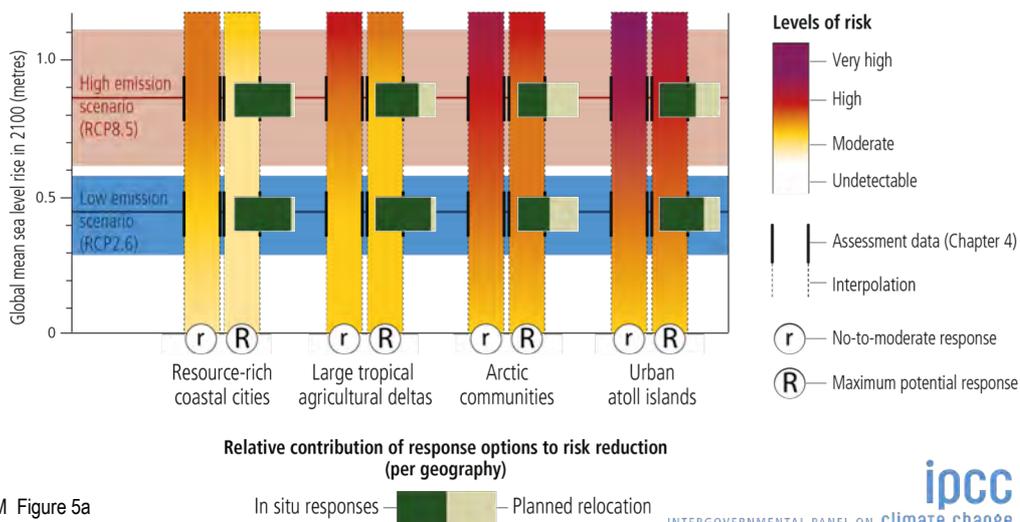
- Risk for illustrative geographies based on mean sea level changes (*medium confidence*)



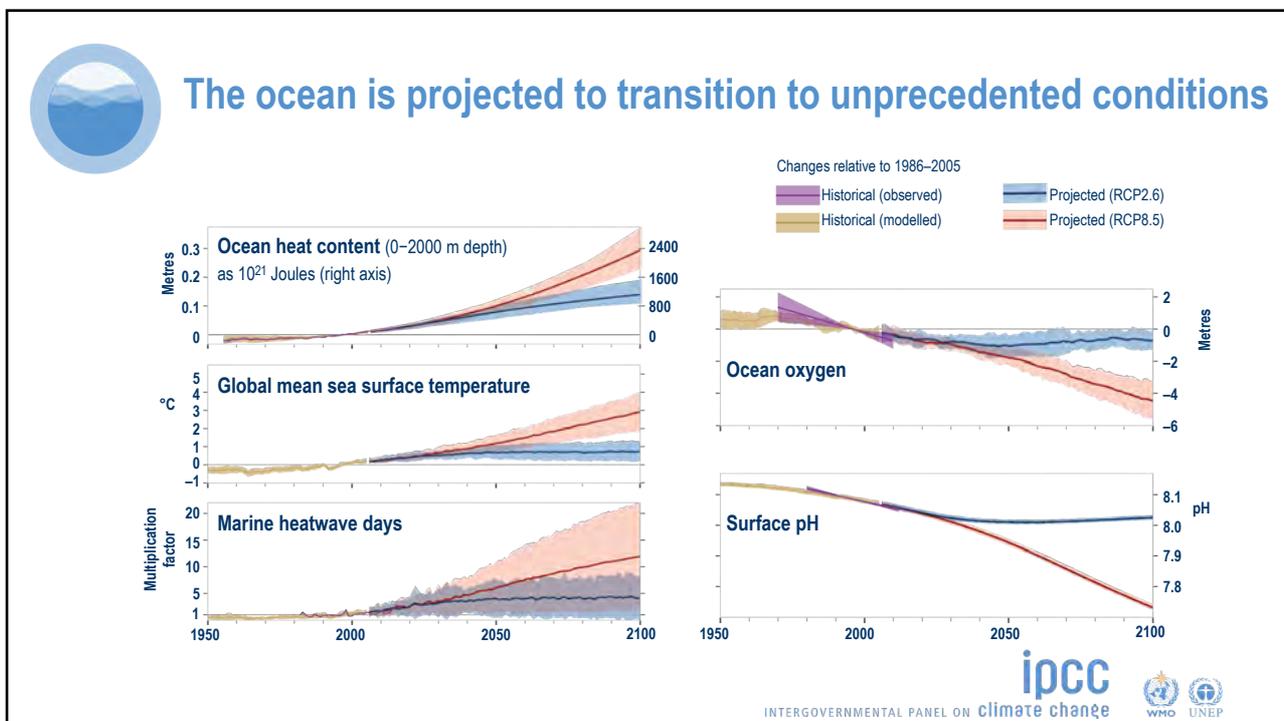
SPM Figure 5a

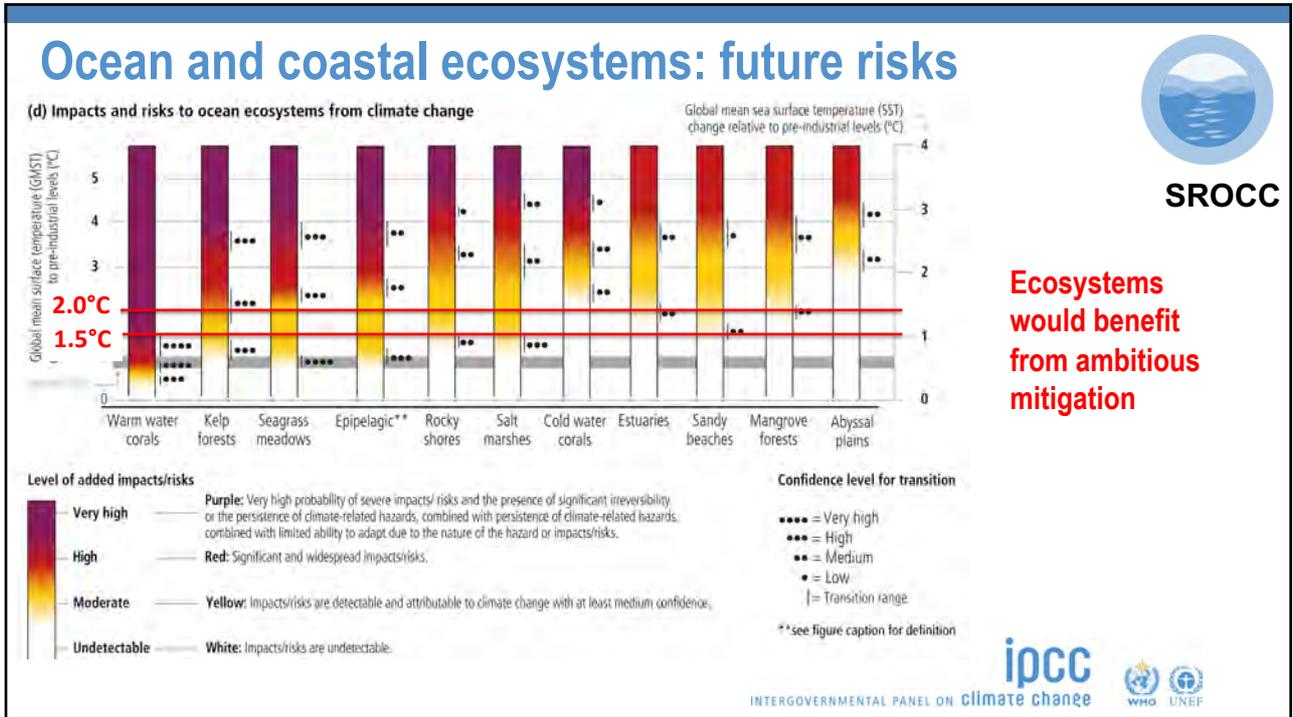
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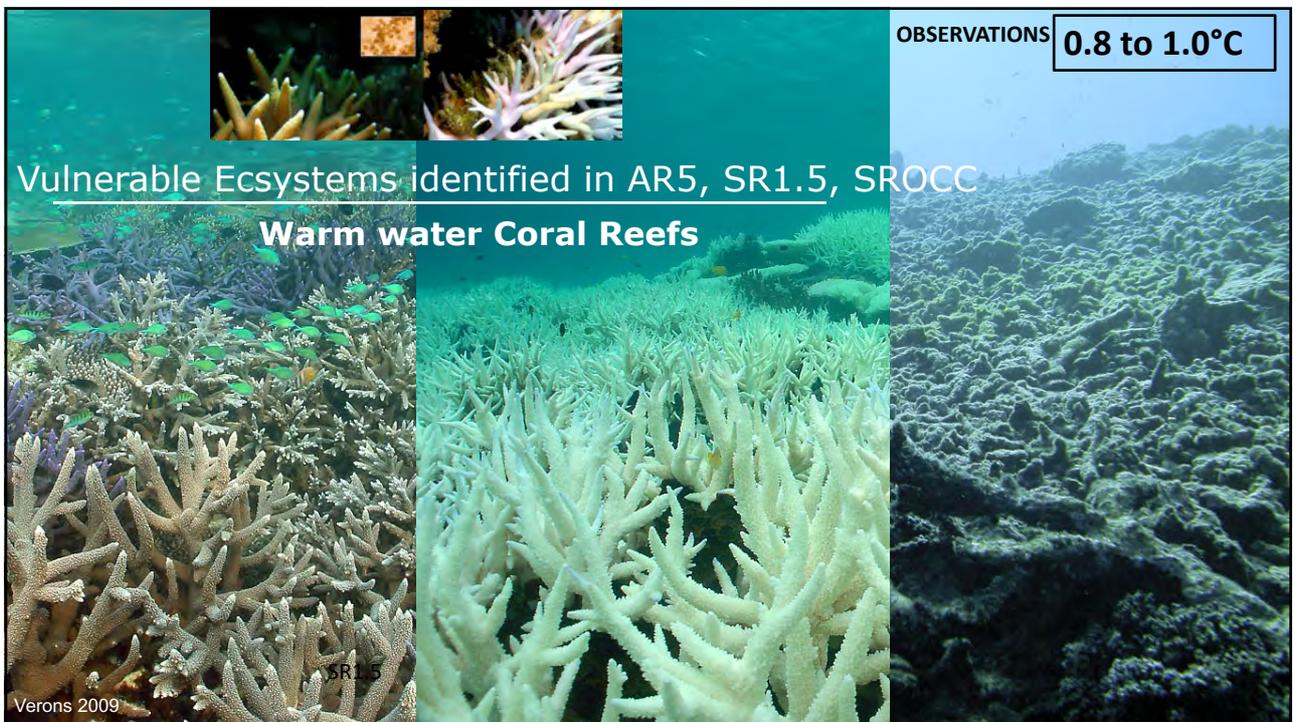


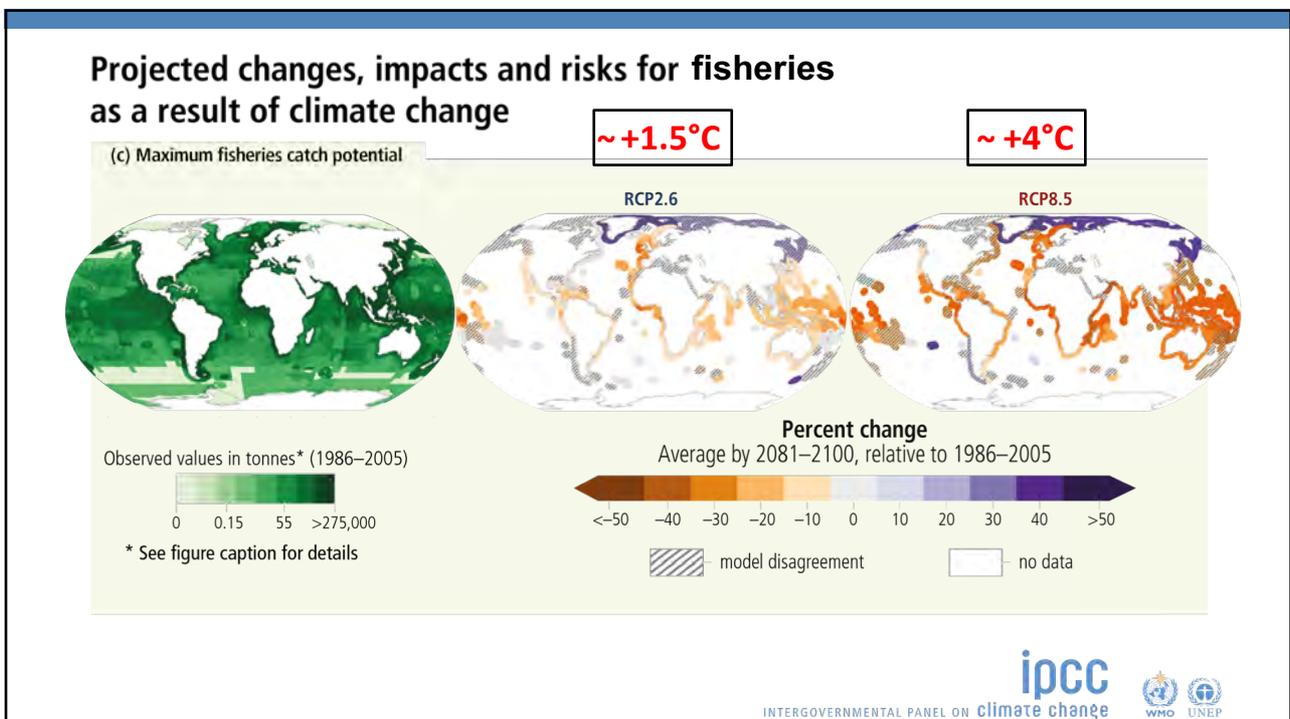
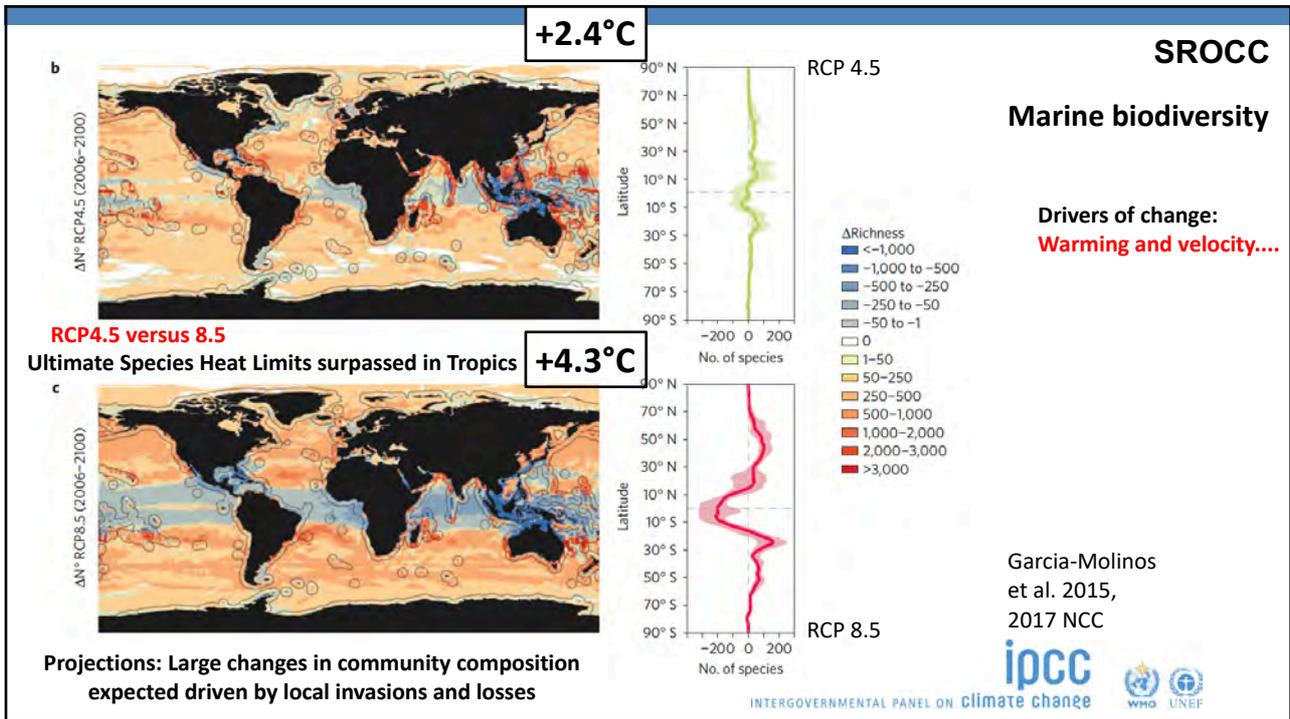
SPM Figure 5a



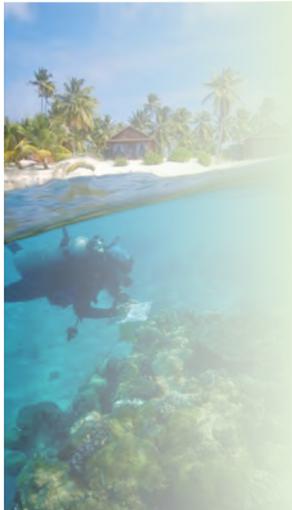


Ecosystems would benefit from ambitious mitigation





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Andre Seale / Aurora Photos

Where do we want to go?

At 1.5°C compared to 2°C:

- **Smaller reductions in yields** of maize, rice, wheat and sorghum, **smaller reductions in fisheries yields**
- Global human population exposed to **water stress is up to 50% less**, also less water stress for ecosystems
- Up to **several hundred million fewer people exposed to climate-related risk and susceptible to poverty by 2050**
- **Lower impact on biodiversity and species**

Avoided impact (severity) for land and oceans: guiding ambition in adaptation and mitigation

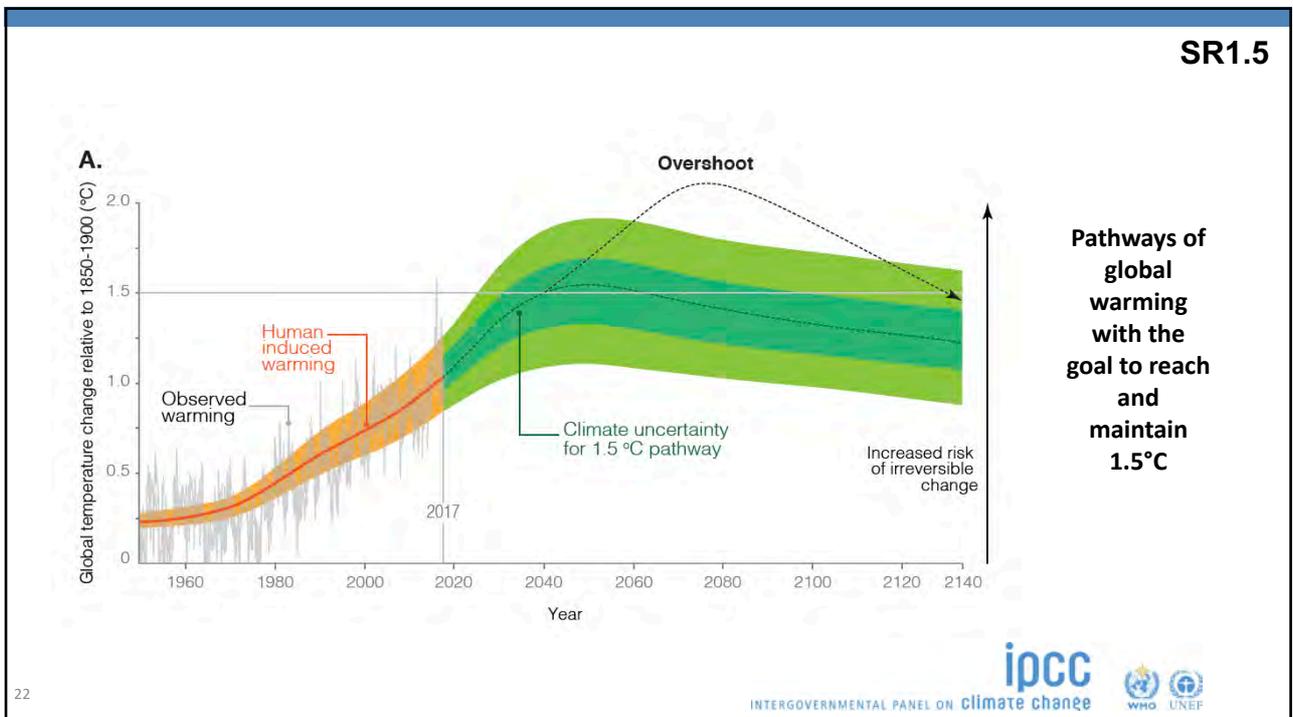
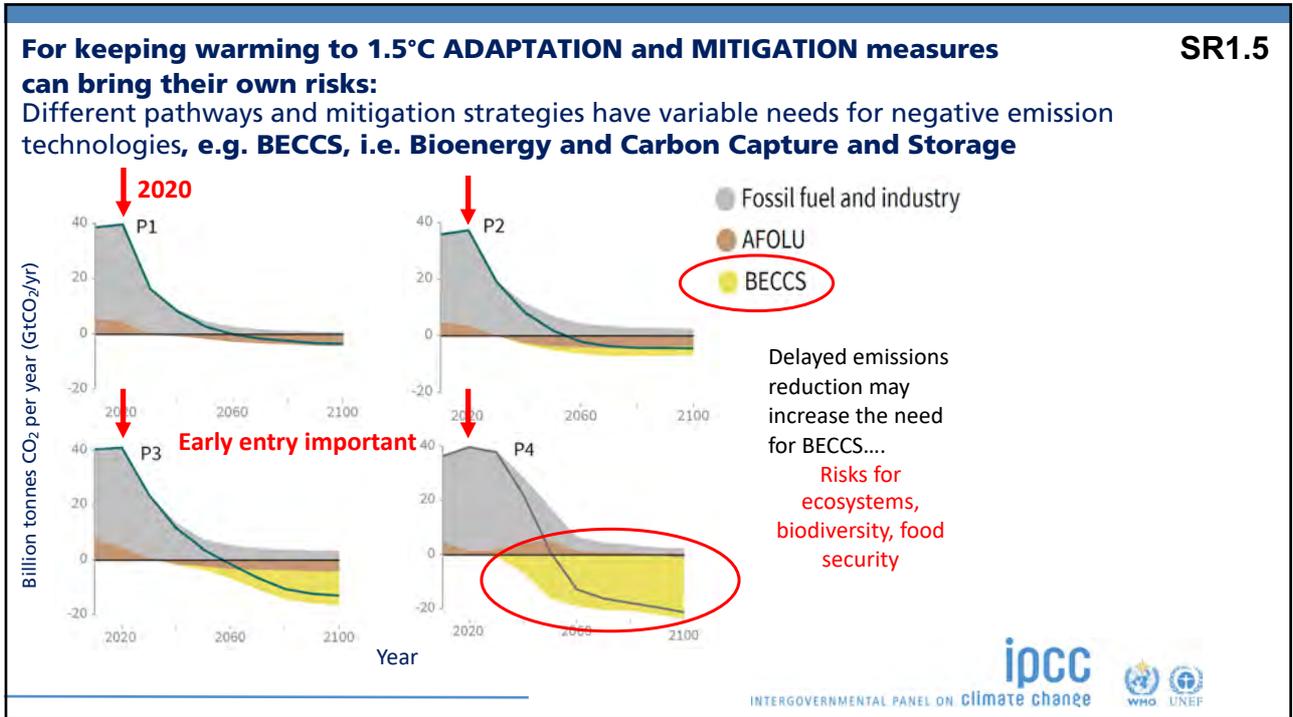
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Gerhard Zwirger-Schoner / Aurora Photos

How do we get there?

- To limit warming to 1.5°C, CO₂ emissions fall **by about 45% by 2030 (from 2010 levels)**
↳ Compared to 20% for 2°C
- To limit warming to 1.5°C, CO₂ emissions would need to reach **'net zero' around 2050**
↳ Compared to around 2075 for 2°C
- **Reducing non-CO₂ emissions** would contribute and also have direct and immediate health benefits







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Ambitious mitigation combined with land and ocean management for sustainability support **biodiversity conservation** and **food security for human society**

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**1.5°C facilitates reaching SDGs:
Multiple synergies between mitigation and adaptation technologies**

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The Paris agreement and climate impacts provide a sense of urgency:
Overcoming societal inertia, political paralysis and inaction in transformation
... reaching sustainability for ecosystems and people

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)
- Institutions --- **yes**
- Informed policy and governance leading and directing societal transformation ---- **may be?**

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

BOTTLE NECK



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For minimizing impact (severity) and associated risks....

Every bit of warming matters

Each year matters

Each choice matters.... closely following 1.5°C emission trajectories matters

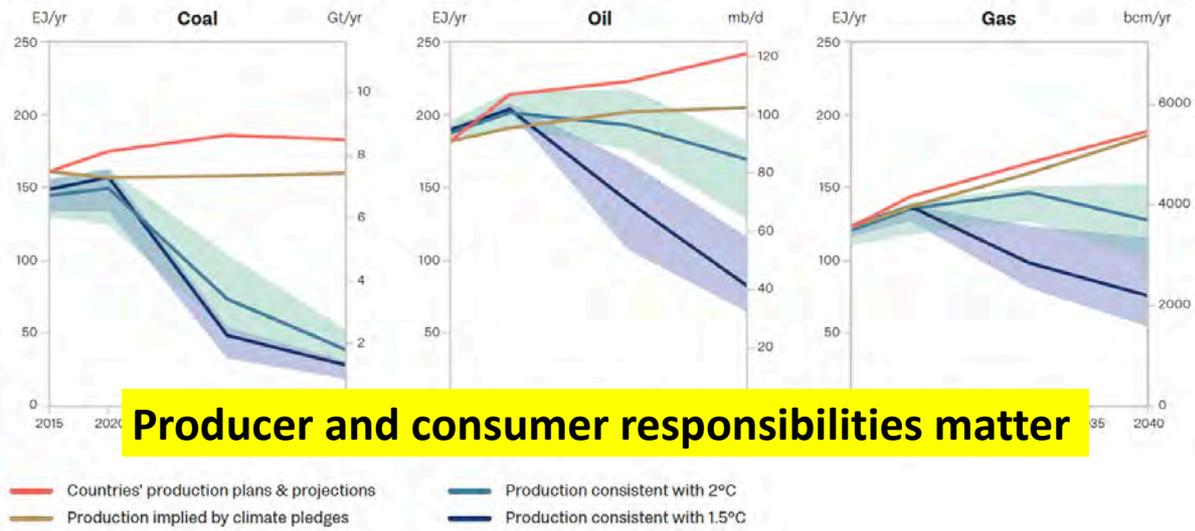
Political and societal will matters

Let us unite behind the science (Haakon, Crown Prince of Norway, OurOceans Oslo 2019)

Ashley Cooper/ Aurora Photos



**BUT Production gap:
Extraction plans for fossil fuels do not meet climate targets**



21.11.2019

UNEP Production Gap Report 2019

More Information:

Website: <http://ipcc.ch>
 microsites: SR1.5, SRCCL, SROCC
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 IPCC Press Office: ipcc-media@wmo.int

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