

Conference on IPCC Special Report on 1.5°C
Significance, Challenges and Implications
India Habitat Centre, Tamarind Hall
New Delhi, 15th October 2018

IPCC SR 1.5°C: Projected Climate Change Potential Impacts and Associated Risks

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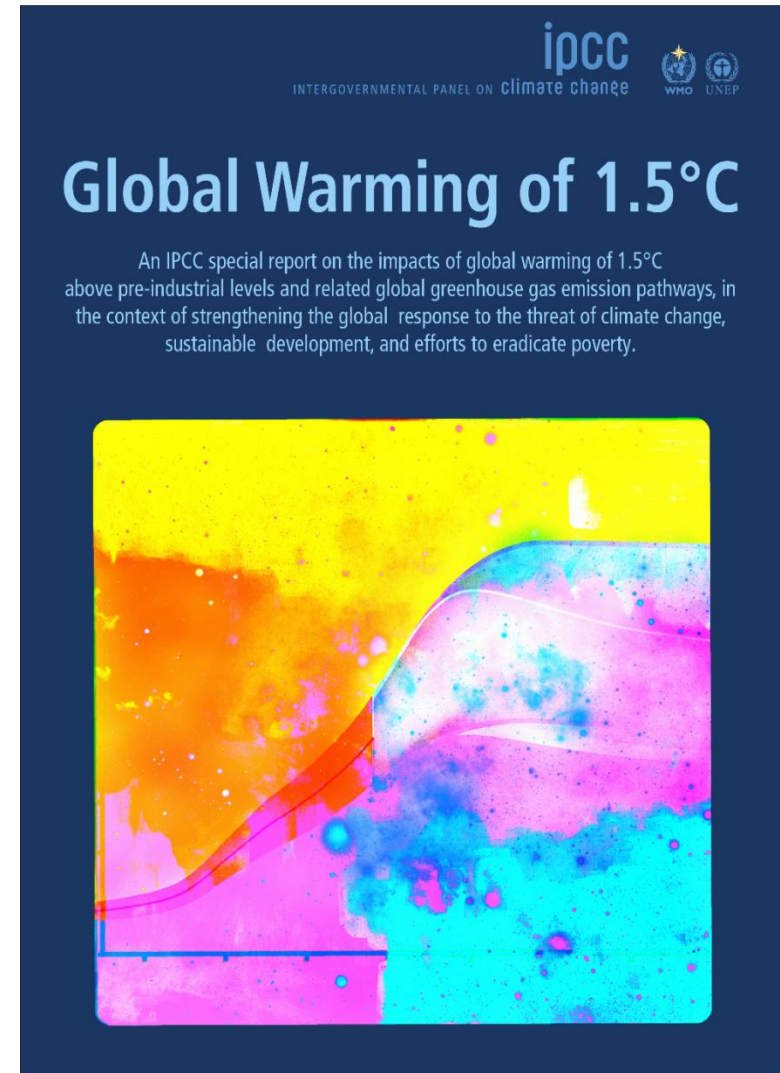
Key findings

Climate change is already affecting people, ecosystems and livelihoods all around the world

Limiting warming to 1.5c is not impossible but would require unprecedented transitions in all aspects of society

There are clear benefits to keeping warming to 1.5c compared to 2c, or higher. Every bit of warming matters

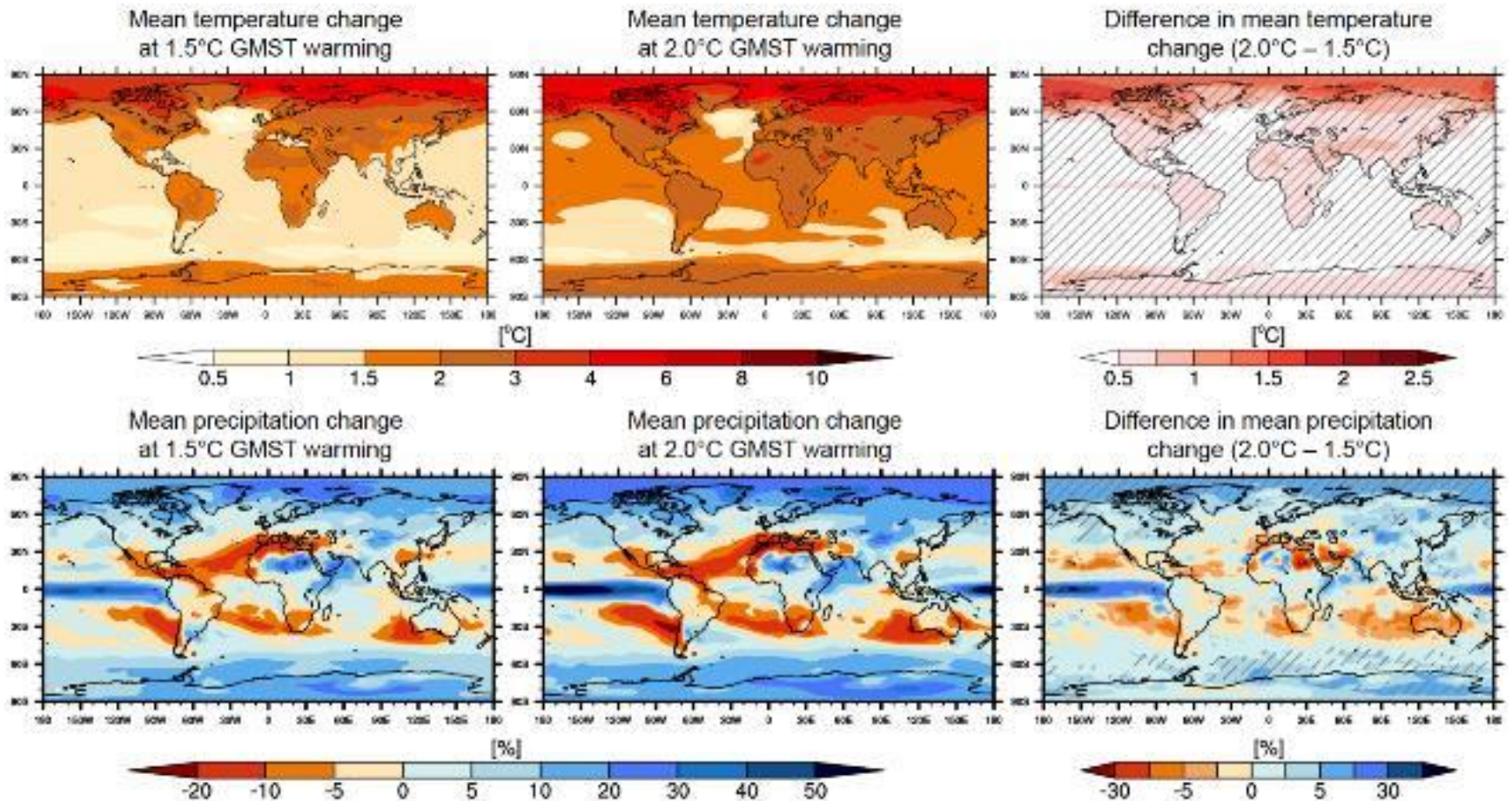
Limiting warming to 1.5c can go hand-in-hand with achieving other world goals, such as achieving sustainable developments and eradicating poverty



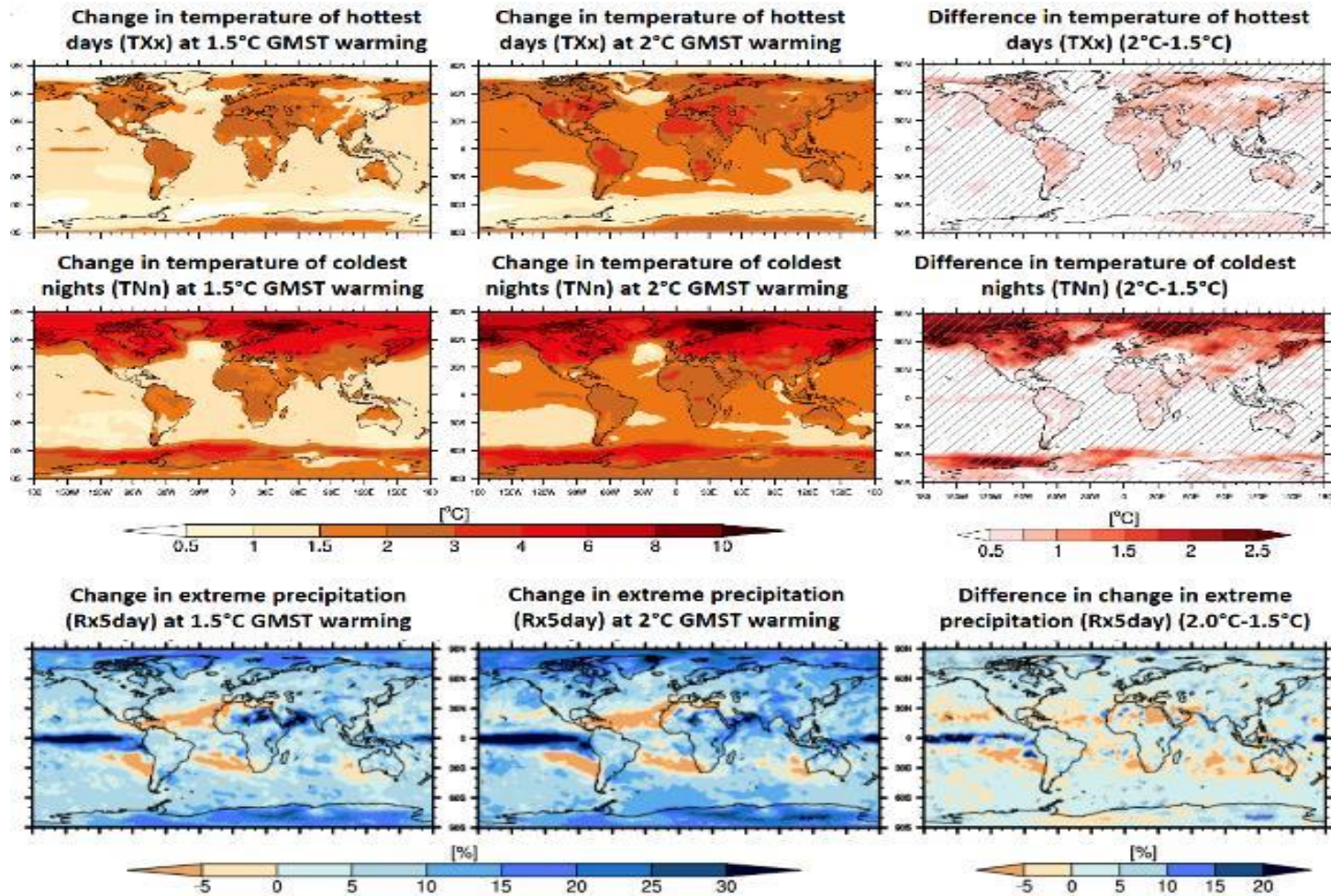
Projected climate change between 1.5°C and 2°C

- Increases in mean temperature in most land and ocean regions
- Hot extremes in most inhabited regions
- Probability of drought and precipitation deficit in some regions
- Heavy precipitation with tropical cyclones
- Increases in fraction of the global land area affected by flood hazards

Mean temperature and mean precipitation changes 1.5°C vs 2° global warming



Change in temperature of hottest days and change in extreme precipitation 1.5°C vs 2°C global warming



Sea level rise and associated risks

1.5°C vs 2°C global warming

- Global mean sea level rise around 0.1 m by 2100
 - 10 million fewer people exposed to risk of rising sea
- Sea level will continue to rise well beyond 2100 and magnitude and rate of rise depends on future emission pathways
- Exposure of Small Islands, low-lying coastal areas and deltas
- Increased saltwater intrusion, flooding and damage to infrastructure
- Opportunities for adaptation in human and ecological systems

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INTERGOVERNMENTAL PANEL ON climate change



Risks for terrestrial and wetland ecosystems 1.5°C vs 2°C global warming

- Lower impact on biodiversity loss and species extinction
- Lower impacts on terrestrial, freshwater, and coastal ecosystems and to retain services to humans
- Transformation of land area and area at risk 50% lower
- Degradation and loss of high-latitude tundra and boreal forests
- An estimated 1.5 – 2.5 million square km more permafrost will thaw over centuries with release of methane

Risks for ocean ecosystems

1.5°C vs 2°C global warming

- Increases in ocean temperature, acidity, and decreases in oxygen levels
 - Sea-ice-free Arctic Ocean during summer is substantially lower
 - Shift in ranges of many marine species to higher latitudes and increase damage to many ecosystems
- Reduction in marine biodiversity, fisheries, and ecosystems and functions and services to humans
 - Loss of coastal resources, and reduce productivity of fisheries and aquaculture
 - Large losses of coral reefs

Risks for human systems

1.5°C vs 2°C global warming

- **Livelihoods and human security**
 - Disadvantaged and vulnerable population dependent on agricultural or coastal livelihoods
 - Arctic ecosystems, dryland regions, SIDs and LDCs
 - Increase number of people both exposed and susceptible to poverty by up to hundred million by 2050
- **Human health**
 - Lower risks for heat related morbidity and mortality
 - Amplification by urban heat islands of heatwaves in cities
 - Increase of vector-borne diseases such as malaria and dengue fever with potential shifts in geographic range

Risks for food security and water 1.5°C vs 2°C global warming

- Food security
 - Reductions in yields of maize, rice, wheat and potentially other cereal crops particularly in sub-Saharan Africa, Southeast Asia, and Central and South America
 - Reduction of food availability in Sahel, Southern Africa, the Mediterranean, Central Europe and the Amazon
 - Low feed quality, spread of diseases and water availability for livestock
- Reduction of population exposed to a climate – induced increase in water stress by up to 50%

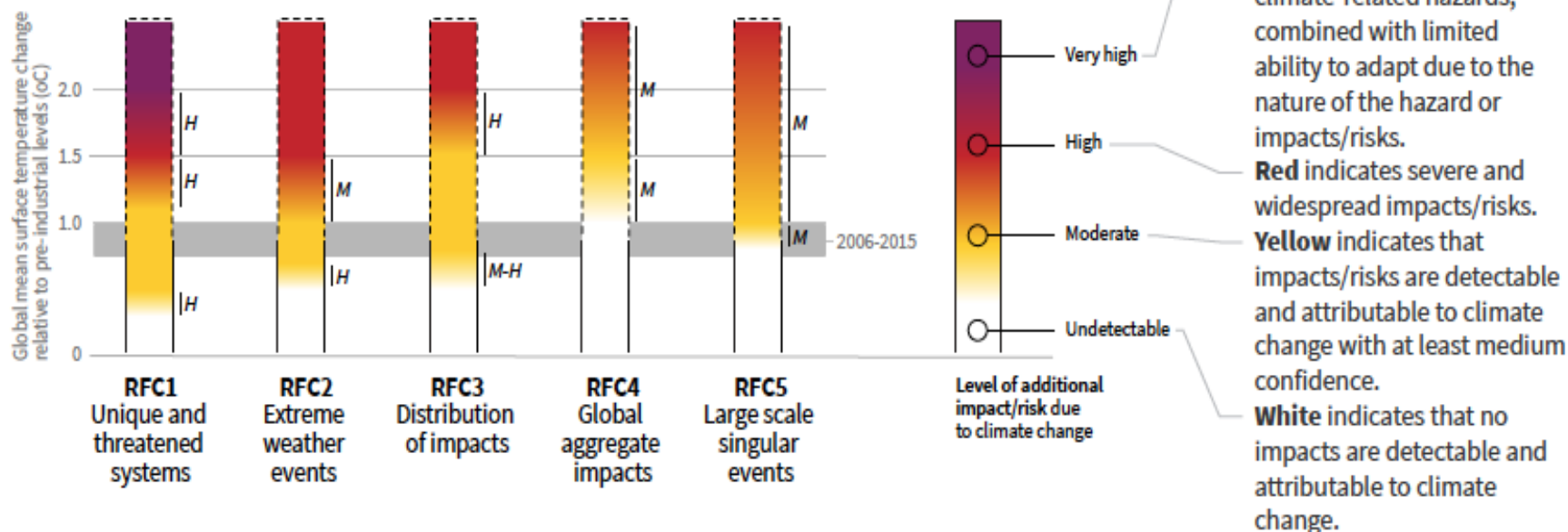
Risks for economic growth 1.5°C vs 2°C global warming

- Low impact on global aggregated economic growth by end of the century
- Larger impact on economic growth in countries in the tropics and Southern Hemisphere, subtropics
- Increase exposure to multiple and compound climate-related risks of poor people in Africa and Asia
- Spatially and temporally overlaps of risks across energy, food, and water sectors

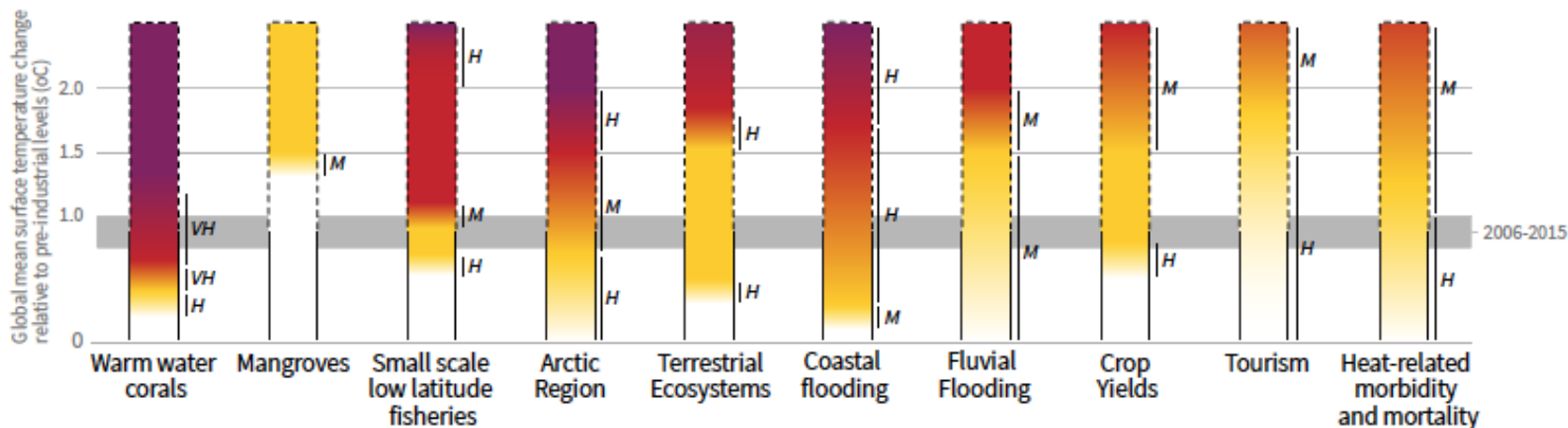
How the level of global warming affects impacts and/or risks associated with the Reasons for Concern (RFCs) and selected natural, managed and human systems

Five Reasons For Concern (RFCs) illustrate the impacts and risks of different levels of global warming for people, economies and ecosystems across sectors and regions.

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



Impacts and risks for selected natural, managed and human systems



Confidence level for transition: L=Low, M=Medium, H=High and VH=Very high

Source: IPCC Special Report on Global Warming of 1.5°C

THANK YOU FOR YOUR ATTENTION!

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