

***Impacts, Adaptation
and Vulnerability***

**An Overview of AR5
WG II Contribution**

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CLA, Chapter 9

The Framing: Climate as part of multiple, interacting contexts

(a) **Risks** and **Opportunities**

(b) **Interactions** : Adaptation, Mitigation and Sustainable Development

The Presentation: Two parts

Part A: Global and Sectoral Aspects (ch 1-20);

Part B: Regional Aspects (21-30)

The Literature Assessment: 308 authors, 70 countries, 50492 review comments

AR4 { 7. Industry, Settlement and Society
8. Human Health

AR5 { 8. Urban Areas
9. Rural Areas
10. Key Economic Sectors
11. Human Health
12. Human Security
13. Livelihoods and Poverty

Scope of the Assessment

AR4 { 17. Assessment of Adaptation Practices, Options, Constraints and Capacity
18. Inter-relationships Between Adaptation and Mitigation

AR5 { 14. Adaptation Needs and Options
15. Adaptation Planning and Implementation
16. Adaptation Opportunities, Constraints, and Limits
17. Economics of Adaptation

An underwater photograph of a coral reef. The water is a deep, murky green. The reef is covered in coral, but many of the coral structures are bleached, appearing white and yellow, indicating they have lost their symbiotic zooxanthellae. The overall appearance is one of a degraded and dying reef system.

WIDESPREAD OBSERVED IMPACTS

A CHANGING WORLD



**VULNERABILITY
AND EXPOSURE**
AROUND THE WORLD

POLAR REGIONS

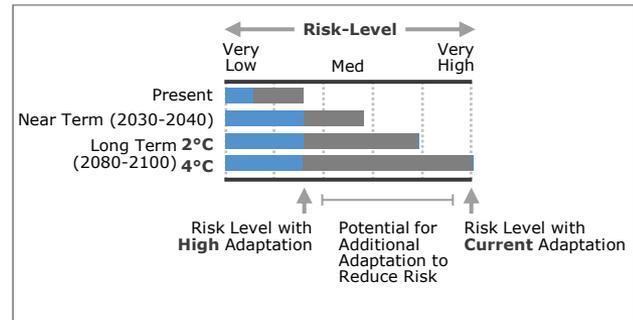
Risks for Ecosystems



Risks for Health and Well-Being



Unprecedented Challenges, Especially from Rate of Change



NORTH AMERICA

Increased Risks from Wildfires



Heat-Related Human Mortality



Damages from River and Coastal Urban Floods



Increased Flood Losses and Impacts



EUROPE

Increased Losses and Impacts from Extreme Heat Events



Increased Water Restrictions



Increased Flood Damage to Infrastructure, Livelihoods, and Settlements



Heat-Related Human Mortality



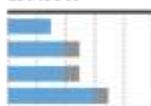
Increased Drought-Related Water and Food Shortage



ASIA

THE OCEAN

Distributional Shift & Reduced Fisheries Catch Potential at Low Latitudes



Increased Mass Coral Bleaching and Mortality



Coastal Inundation and Habitat Loss



CENTRAL AND SOUTH AMERICA

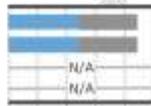
Reduced Water Availability and Increased Flooding and Landslides



Reduced Food Production and Quality



Spread of Vector-Borne Diseases



N/A

N/A

AFRICA

Compounded Stress on Water Resources



Reduced Crop Productivity and Livelihood and Food Security



Vector- and Water-Borne Diseases



SMALL ISLANDS

Loss of Livelihoods, Settlements, Infrastructure, Ecosystem Services, and Economic Stability



Risks for Low-Lying Coastal Areas



Significant Change in Composition and Structure of Coral Reef Systems



Increased Flood Damage to Infrastructure and Settlements



AUSTRALASIA

Increased Risks to Coastal Infrastructure and Low-Lying Ecosystems





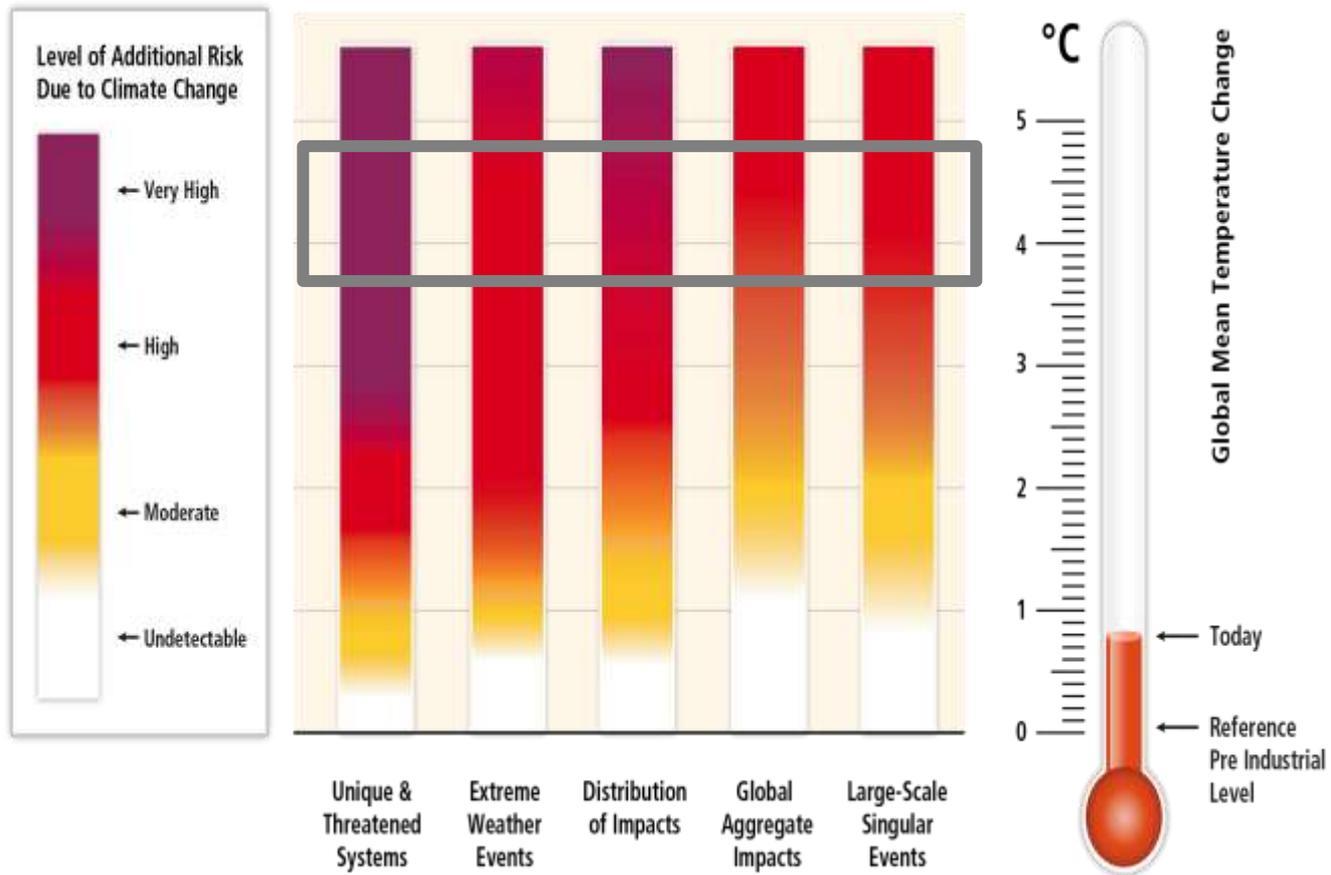
INCREASING MAGNITUDES
OF WARMING INCREASE
THE LIKELIHOOD OF

**SEVERE AND
PERVASIVE IMPACTS**



RISKS OF
CLIMATE CHANGE
INCREASE
WITH CONTINUED
HIGH EMISSIONS

Without additional mitigation, global mean surface temperature is projected to increase by 3.7 to 4.8°C over the 21st century.



Based on WGII AR5
Figure 19.4

Potential Impacts of Climate Change



Food and water shortages



Increased morbidity and mortality



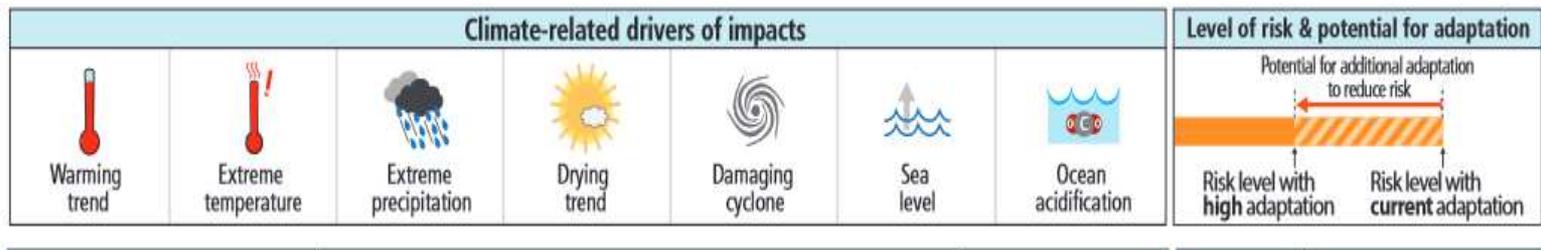
Increased poverty



Coastal flooding

AR5 WGII SPM

Key risks: Climate change, South East Asia

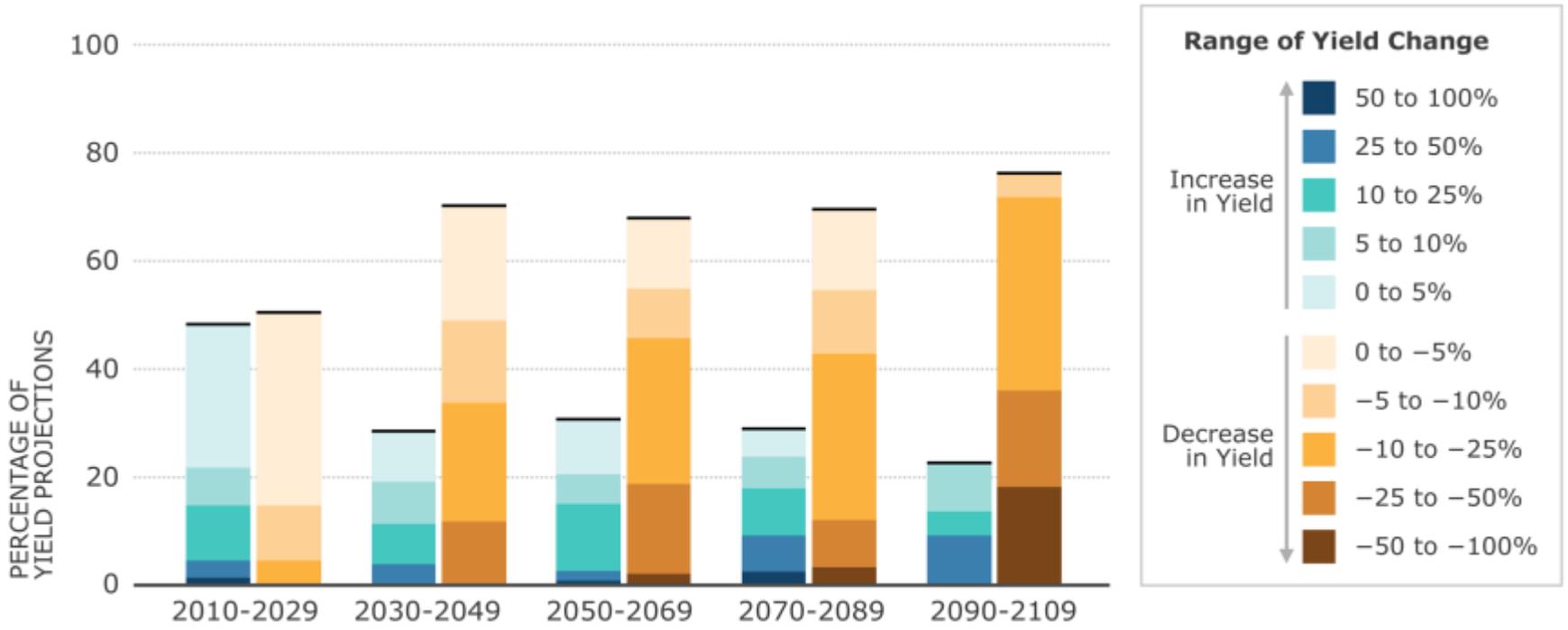


Region: Impacted by Flooding and Droughts

Some concerns....with adaptation potential bars relatively small in most cases at 4 deg C

- Wildfires, Health impacts from smoke exposure.
- Increase in vector borne diseases such as dengue
- Decline in rice yields, fisheries

* Please Refer to Table in the Asia Flyer





CLIMATE CHANGE

REDUCING AND MANAGING RISKS

ipcc

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Climate change in the The Lower Mekong Basin

Observations & future projections include:

- Intensified flood and drought events which have noticeably impacted agricultural output (90% rice production losses in Cambodia during 1996-2001)
- Vietnam and Cambodia are most vulnerable to climate change impacts on fisheries

All countries of the LMB have national adaptation plans; Transboundary adaptation planning : A multi-stakeholder Regional Adaptation Action Network has been proposed.

