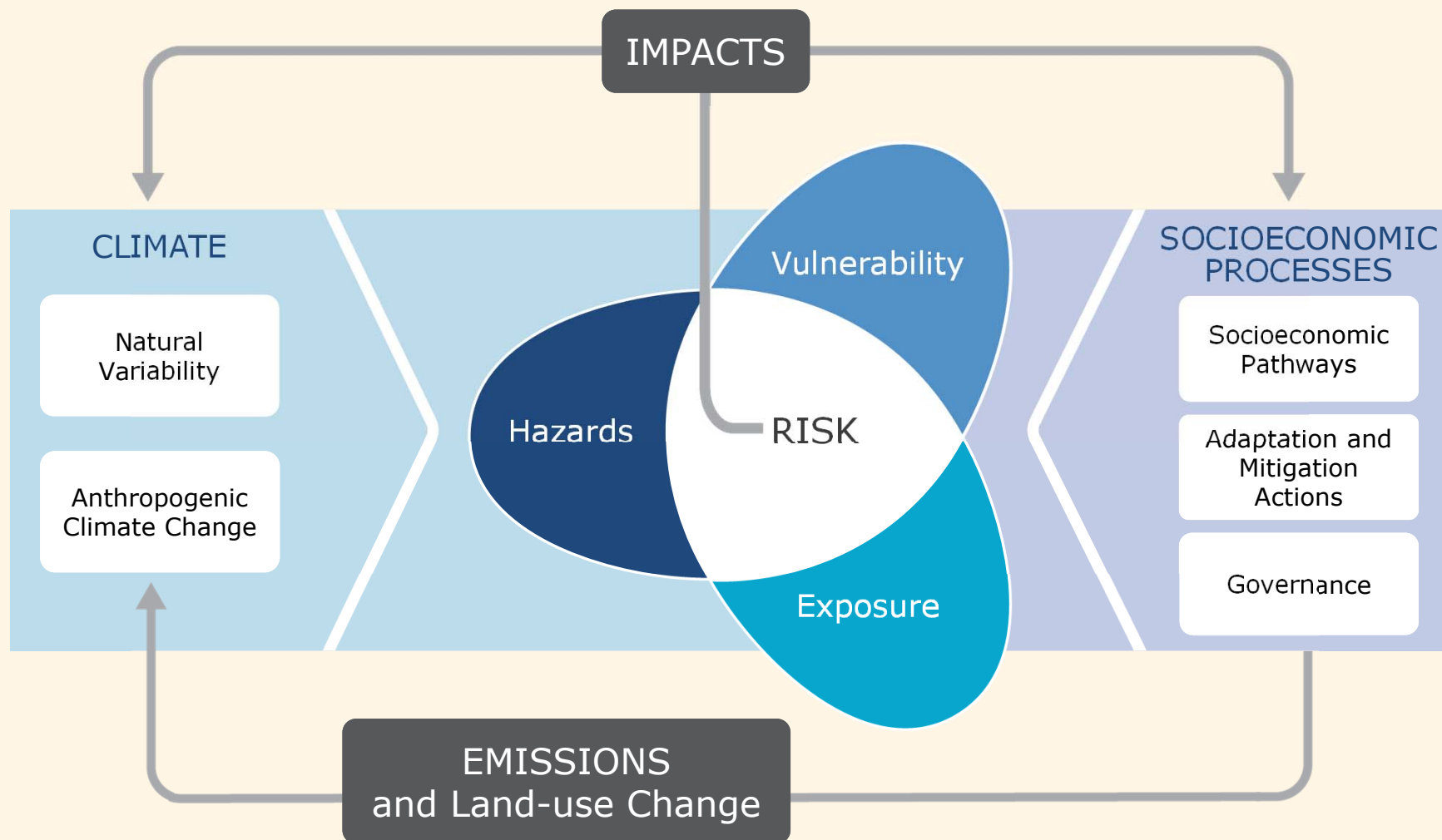


CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY

IPCC WGII
Chris Field, Co-Chair



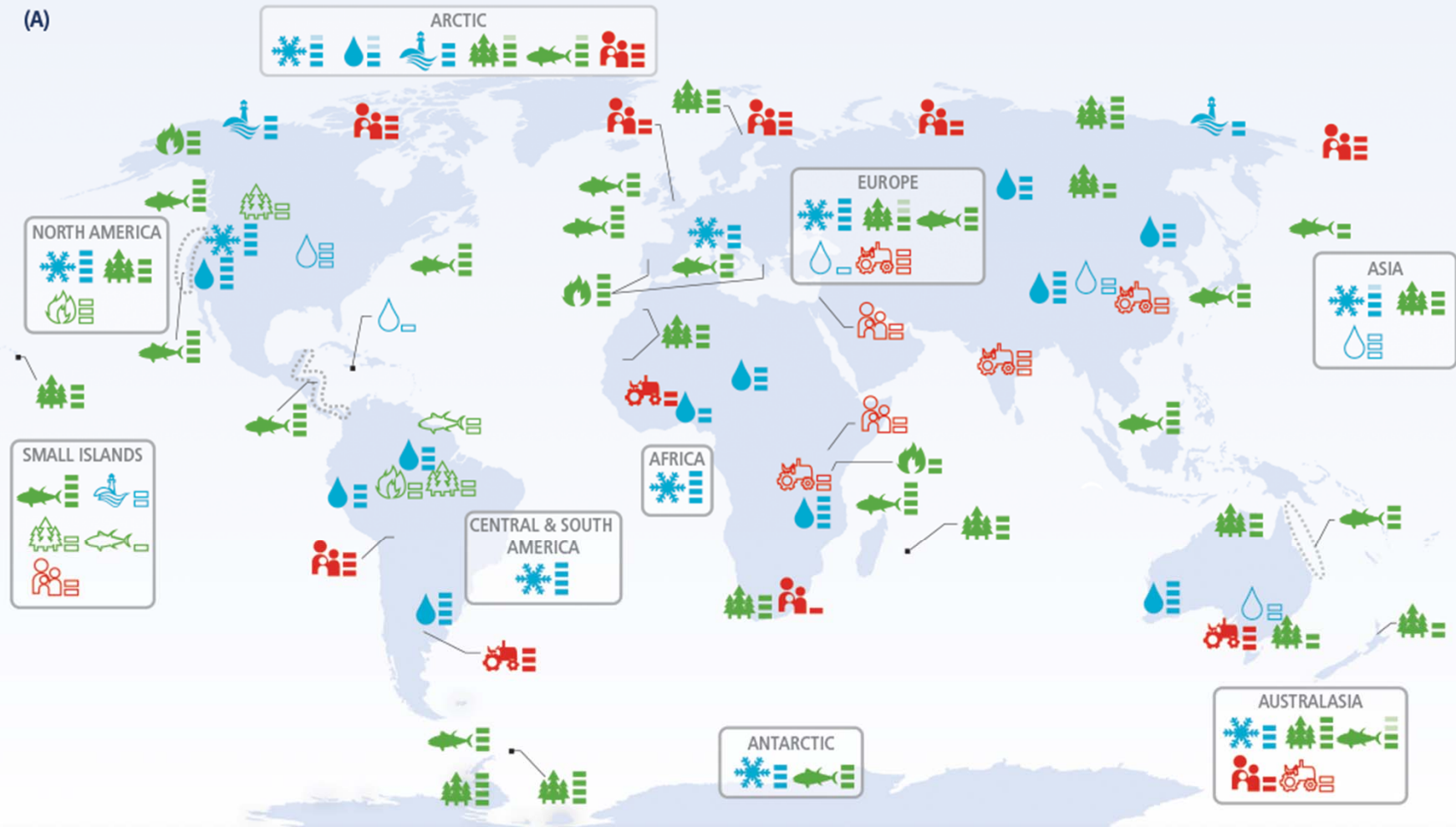


OBSERVED IMPACTS
OF CLIMATE CHANGE

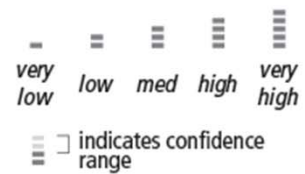
ARE WIDESPREAD

AND CONSEQUENTIAL

(A)



Confidence in attribution to climate change



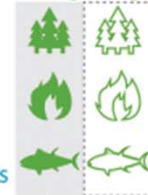
Observed impacts attributed to climate change for

Physical systems



Glaciers, snow, ice, and/or permafrost
Rivers, lakes, floods, and/or drought
Coastal erosion and/or sea level effects

Biological systems



Terrestrial ecosystems
Wildfire
Marine ecosystems

Human and managed systems

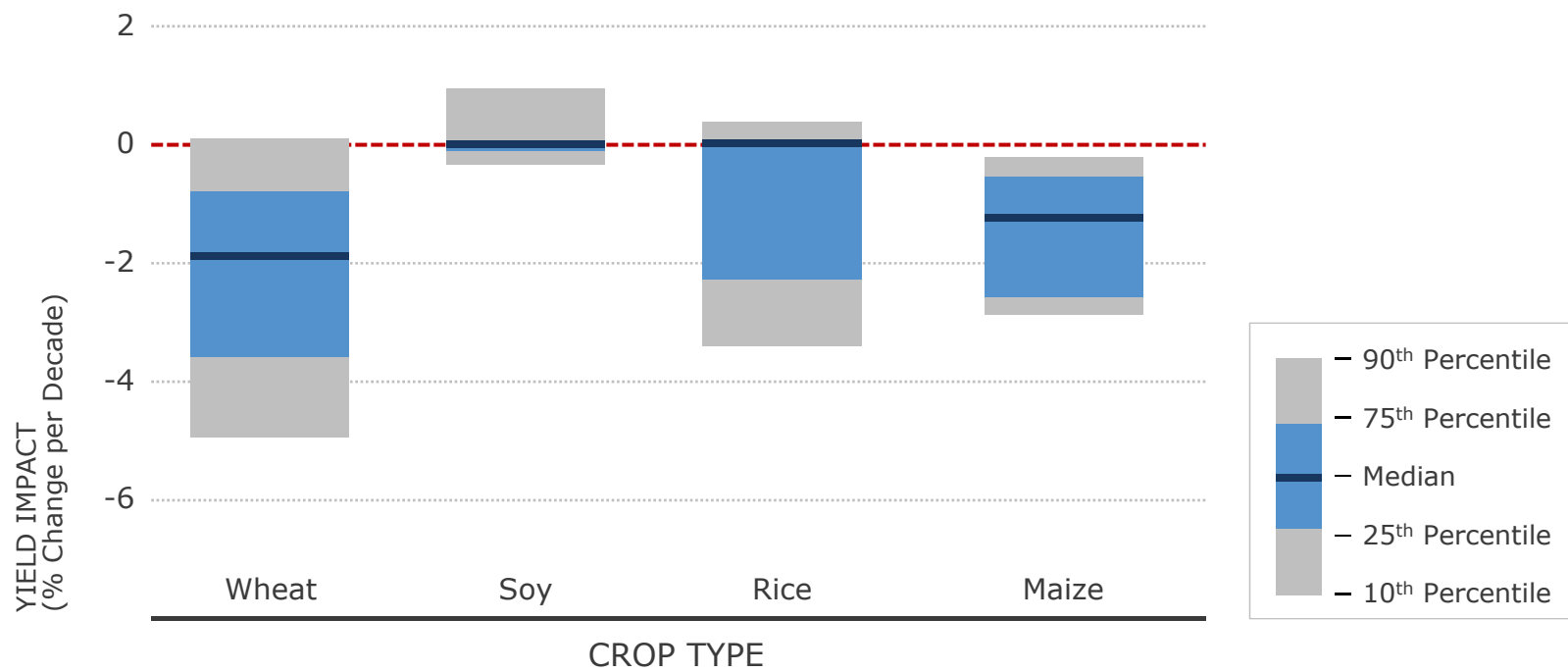


Food production
Livelihoods, health, and/or economics



Regional-scale impacts

Outlined symbols = Minor contribution of climate change
Filled symbols = Major contribution of climate change



PEOPLE, SOCIETIES,
AND ECOSYSTEMS
AROUND THE WORLD

**VULNERABLE
AND EXPOSED**

IN DIFFERENT WAYS

PEOPLE, SOCIETIES,
AND ECOSYSTEMS
AROUND THE WORLD

**VULNERABLE
AND EXPOSED**

IN DIFFERENT WAYS



ADAPTATION IS ALREADY OCCURING

ADAPTATION IS

ALREADY OCCURRING

Adaptation is already occurring

- 
- Combining Traditional and Scientific Knowledge
 - Adapting Communications Infrastructure
 - Coastal & Water Management
 - Environmental Protection & Land Planning
 - Disaster Risk Management
 - Development Planning
 - Early Warning Systems
 - Mangrove Reforestation
 - Water Resources Management
 - Municipal-Level Actions
 - Adapting Energy & Public Infrastructure
 - Disaster Risk Management
 - Basic Public Health
 - Livelihood Diversification
 - Ecosystem-Based Adaptation
 - Water Resources Management
 - Resilient Crop Varieties
 - Planning for Sea-Level Rise
 - Planning for Reduced Water Availability
 - International Cooperation
 - Marine Spatial Planning

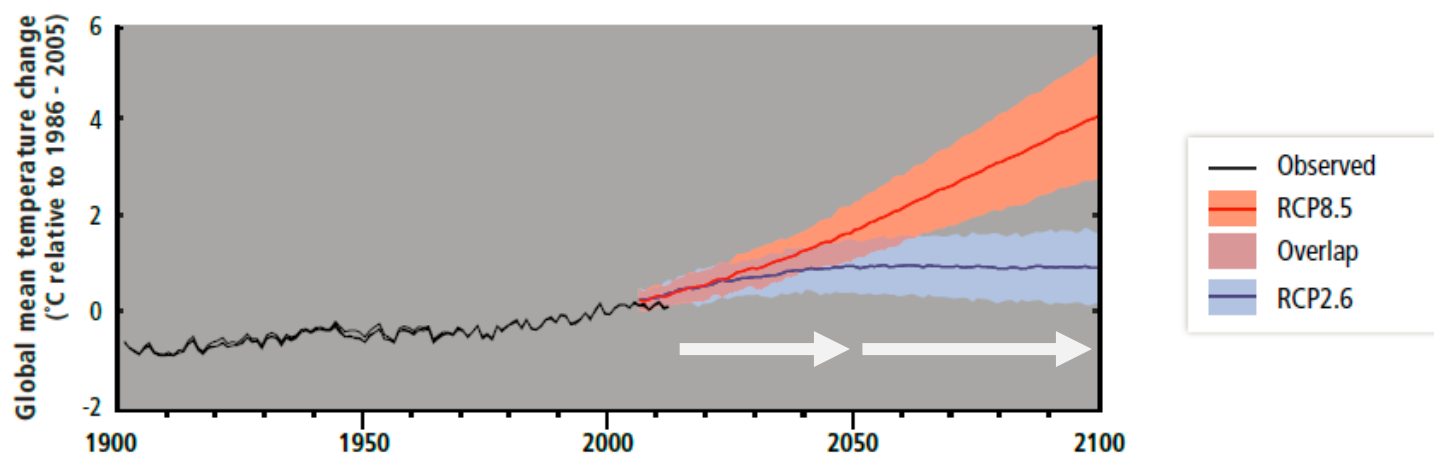
INCREASING MAGNITUDES
OF WARMING INCREASE
THE LIKELIHOOD OF

**SEVERE AND
PERVASIVE IMPACTS**

ipcc

INTERGOVERNMENTAL PANEL ON climate change

Warming over the 21st century



Projected Temperature Change



Difference from 1986-2005 mean (°C)

Solid Color

Very strong agreement

White Dots

Strong agreement

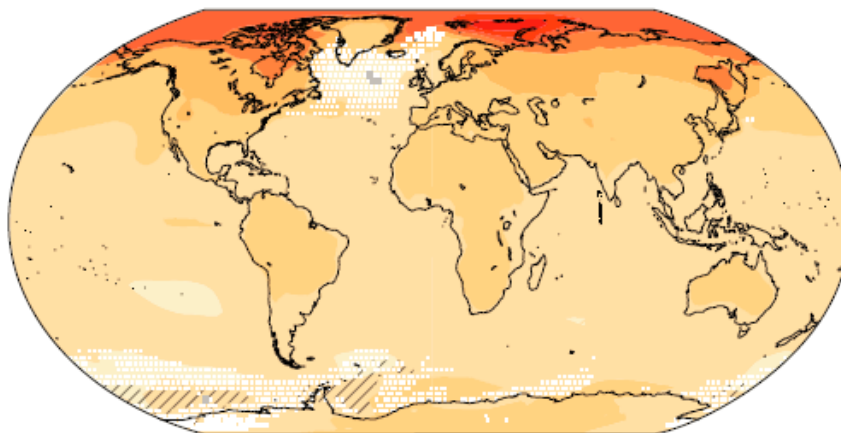
Gray

Divergent changes

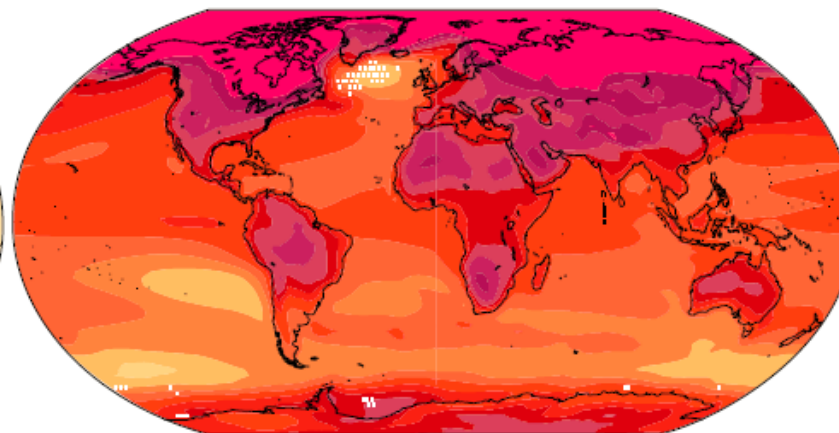
Diagonal Lines

Little or no change

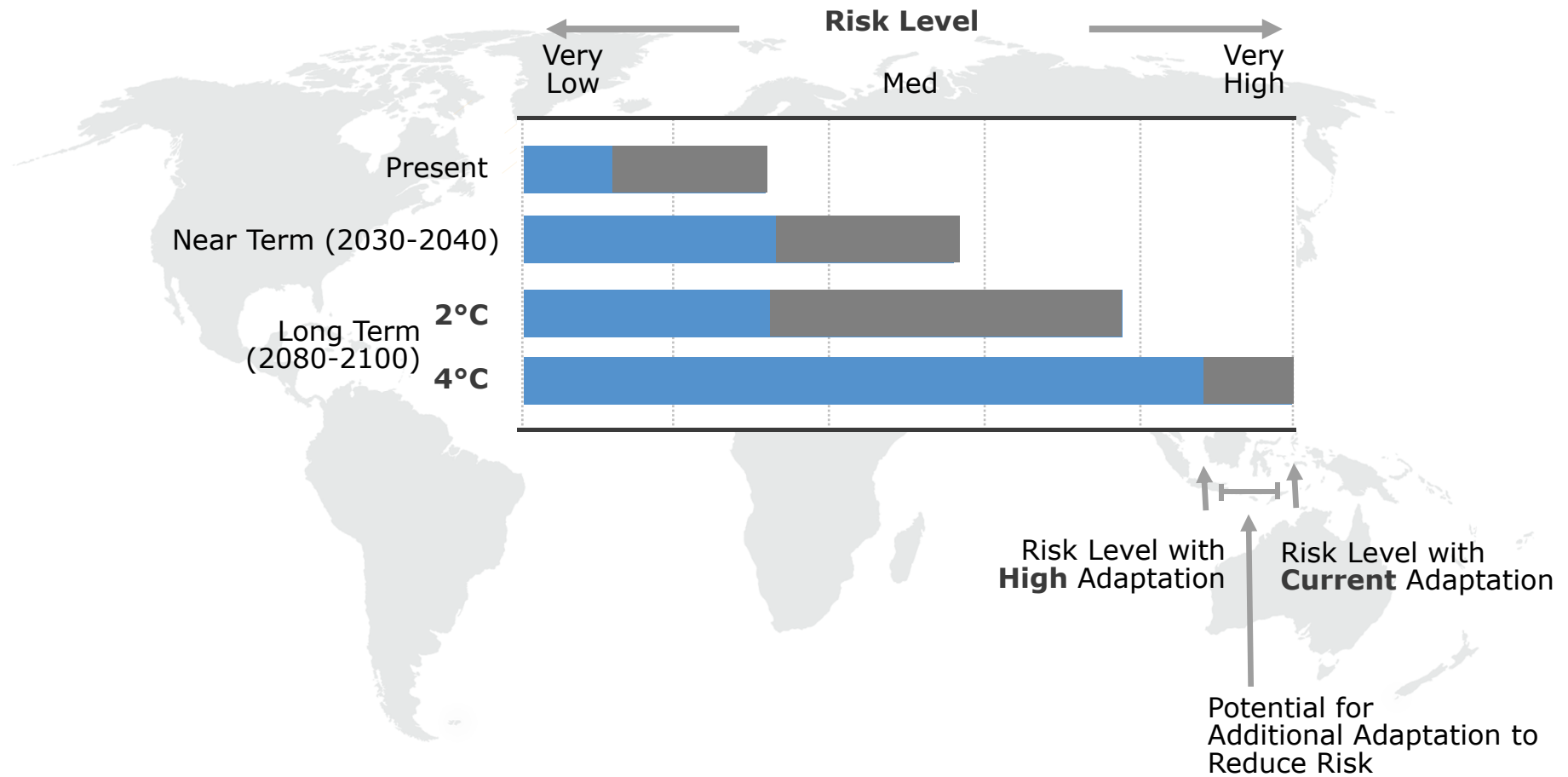
RCP2.6 2081 - 2100



RCP8.5 2081 - 2100



Assessing risk



Ecosystems

Health

Rate

POLAR REGIONS

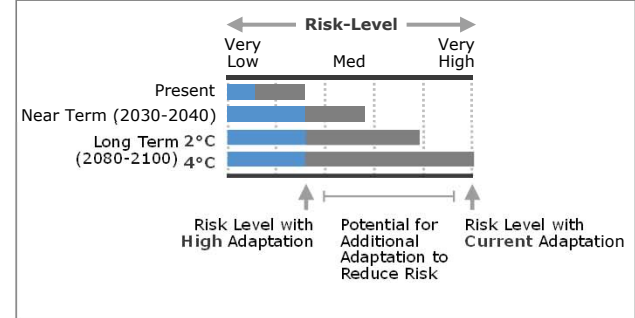
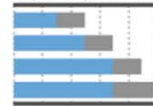
Risks for Ecosystems



Risks for Health and Well-Being



Unprecedented Challenges, Especially from Rate of Change



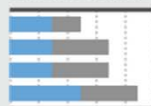
NORTH AMERICA

Increased Risks from Wildfires



Wildfire

Heat-Related Human Mortality



Heat

Damages from Flooding and Coastal Urban Floods



Flood Water

THE OCEAN

Distributional Shift & Reduced Fisheries Catch Potential at Low Latitudes



Coral Fisheries

Increased Mass Coral Bleaching and Mortality



Coastal Inundation and Habitat Loss



Coasts

CENTRAL AND SOUTH AMERICA

Reduced Water Availability and Increased Flooding and Landslides



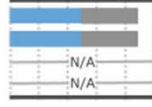
Water

Reduced Food Production and Quality



Crops

Spread of Vector-Borne Diseases



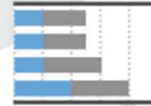
Disease

N/A

N/A

EUROPE

Increased Flood Losses and Impacts



Increased Water Restrictions



Heat

Increased Losses and Impacts from Extreme Heat Events

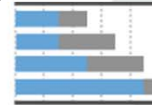


AFRICA

Compounded Stress on Water Resources



Reduced Crop Productivity and Livelihood and Food Security



Vector- and Water-Borne Diseases



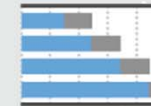
Food Disease

Increased Flood Damage to Infrastructure, Livelihoods, and Settlements



Flood

Heat-Related Human Mortality



Heat

Increased Drought-Related Water and Food Shortage



Drought

ASIA

SMALL ISLANDS

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



Risks for Low-Lying Coastal Areas



Reefs

Significant Change in Composition and Structure of Coral Reef Systems



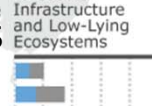
Increased Flood Damage to Infrastructure and Low-Lying Ecosystems



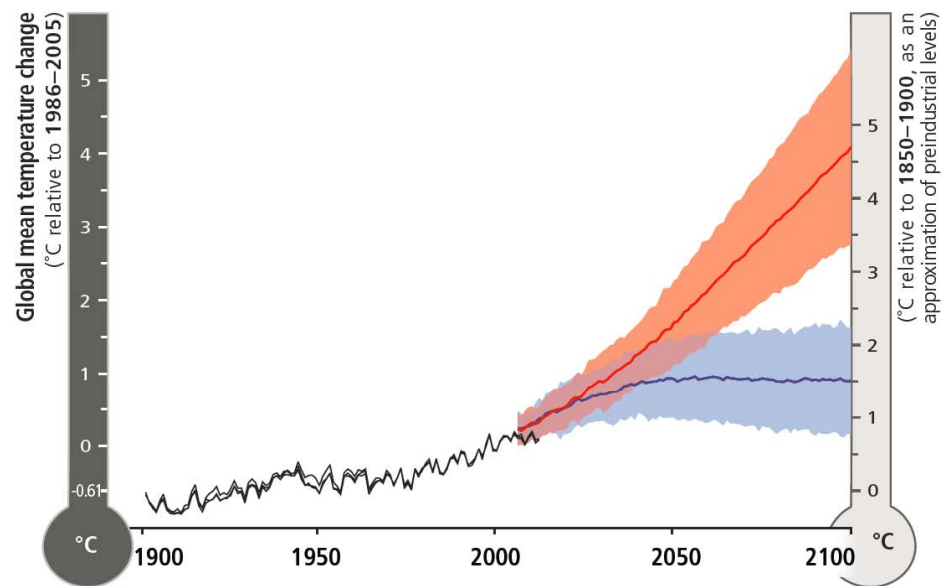
Coasts Flood

AUSTRALASIA

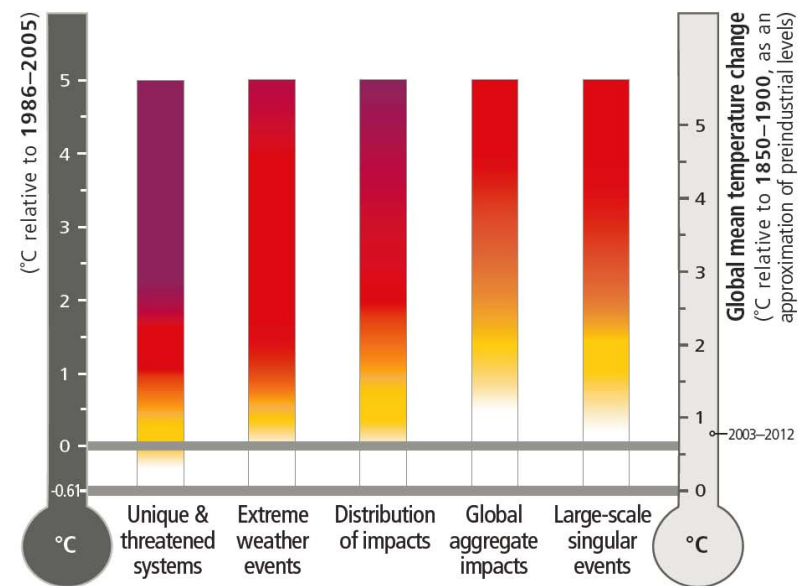
Increased Risks to Coastal Infrastructure and Low-Lying Ecosystems



Coasts



Global mean temperature change



Level of additional risk due to climate change

Undetectable Moderate High Very high

EFFECTIVE CLIMATE CHANGE ADAPTATION

A MORE VIBRANT WORLD

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INTERGOVERNMENTAL PANEL ON climate change

CLIMATE CHANGE

REDUCING AND MANAGING RISKS

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INTERGOVERNMENTAL PANEL ON climate change