

# IPCC Fifth Assessment Report, 2014

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IPCC Working Group II



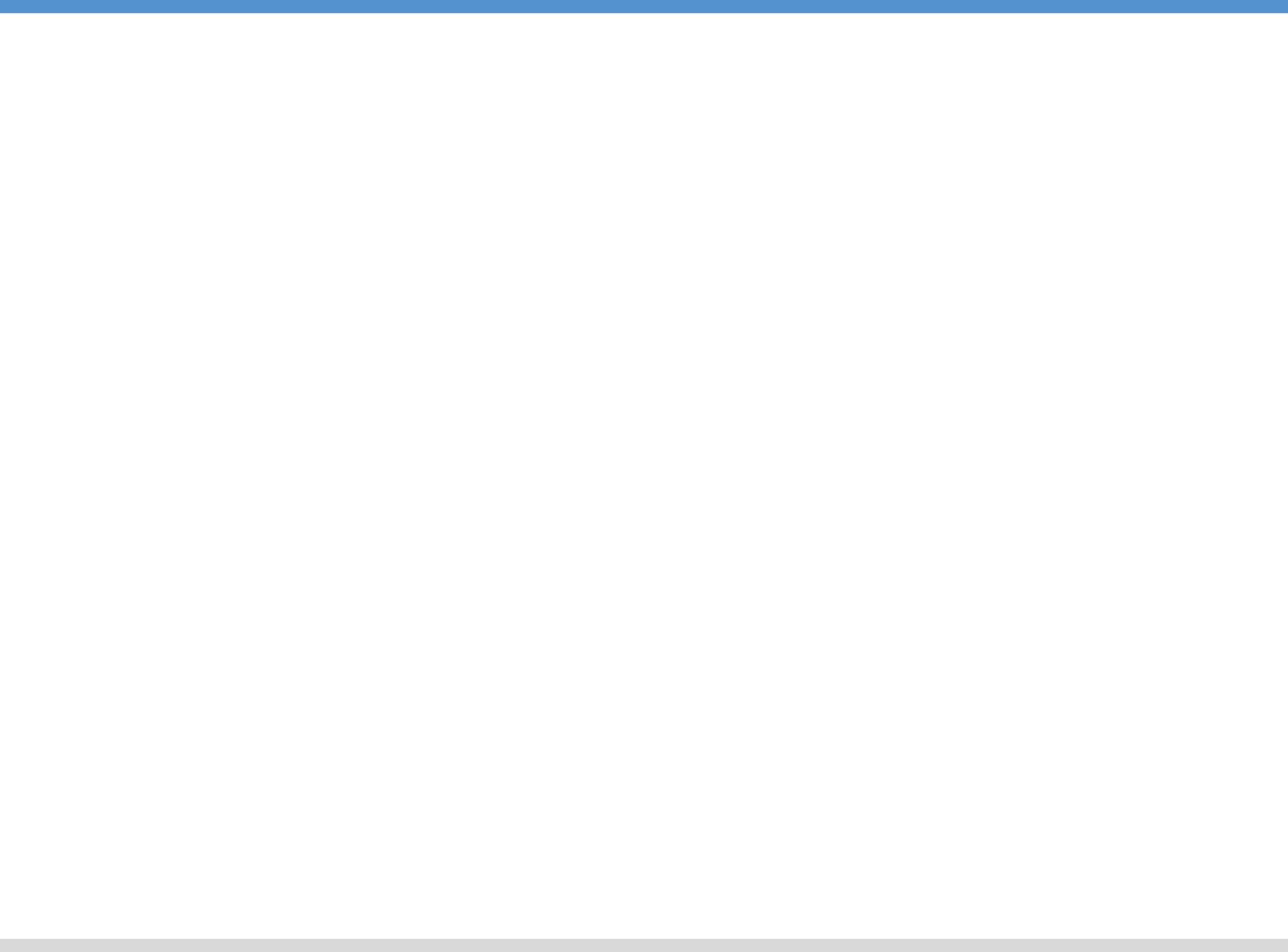


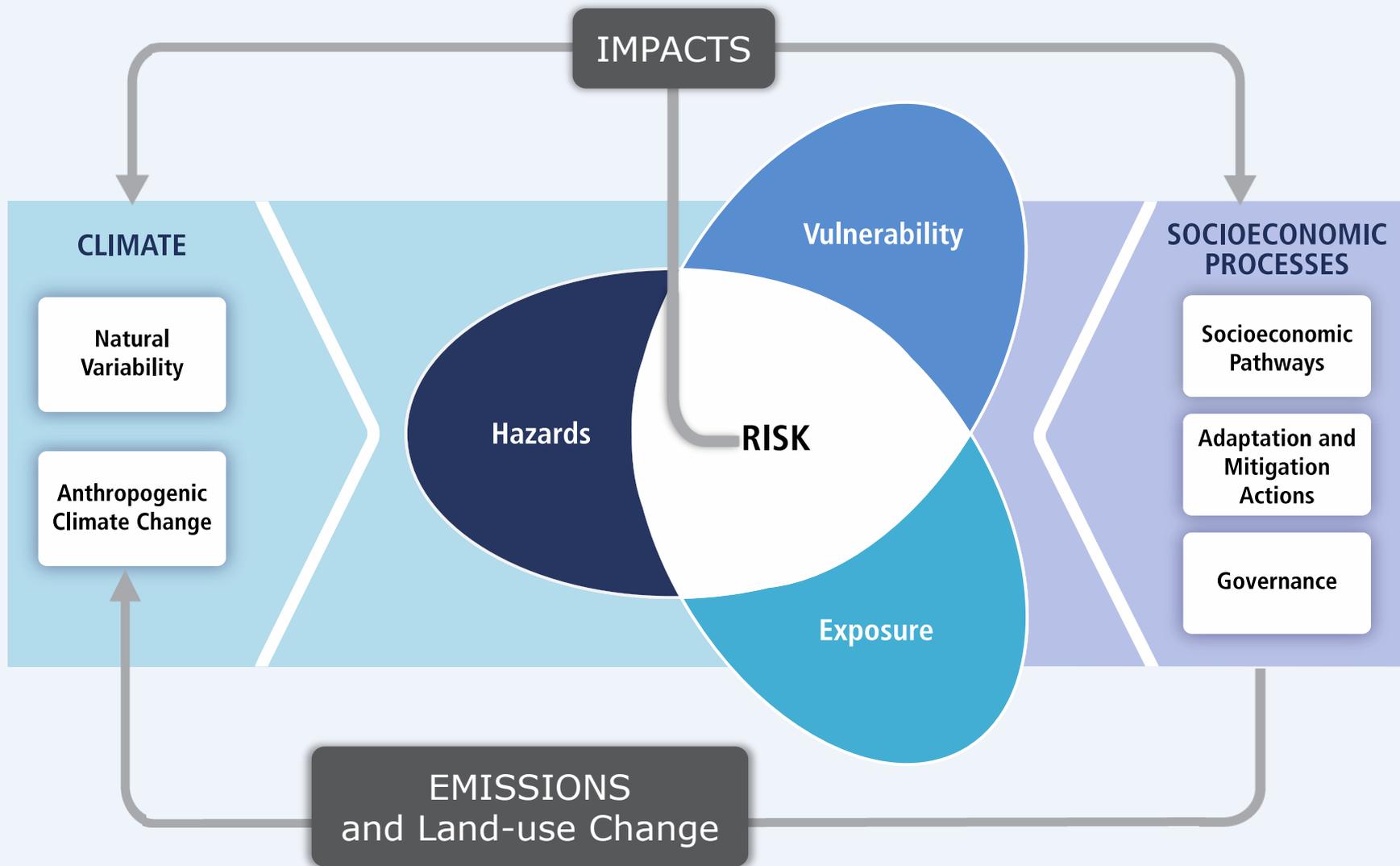
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# CLIMATE CHANGE

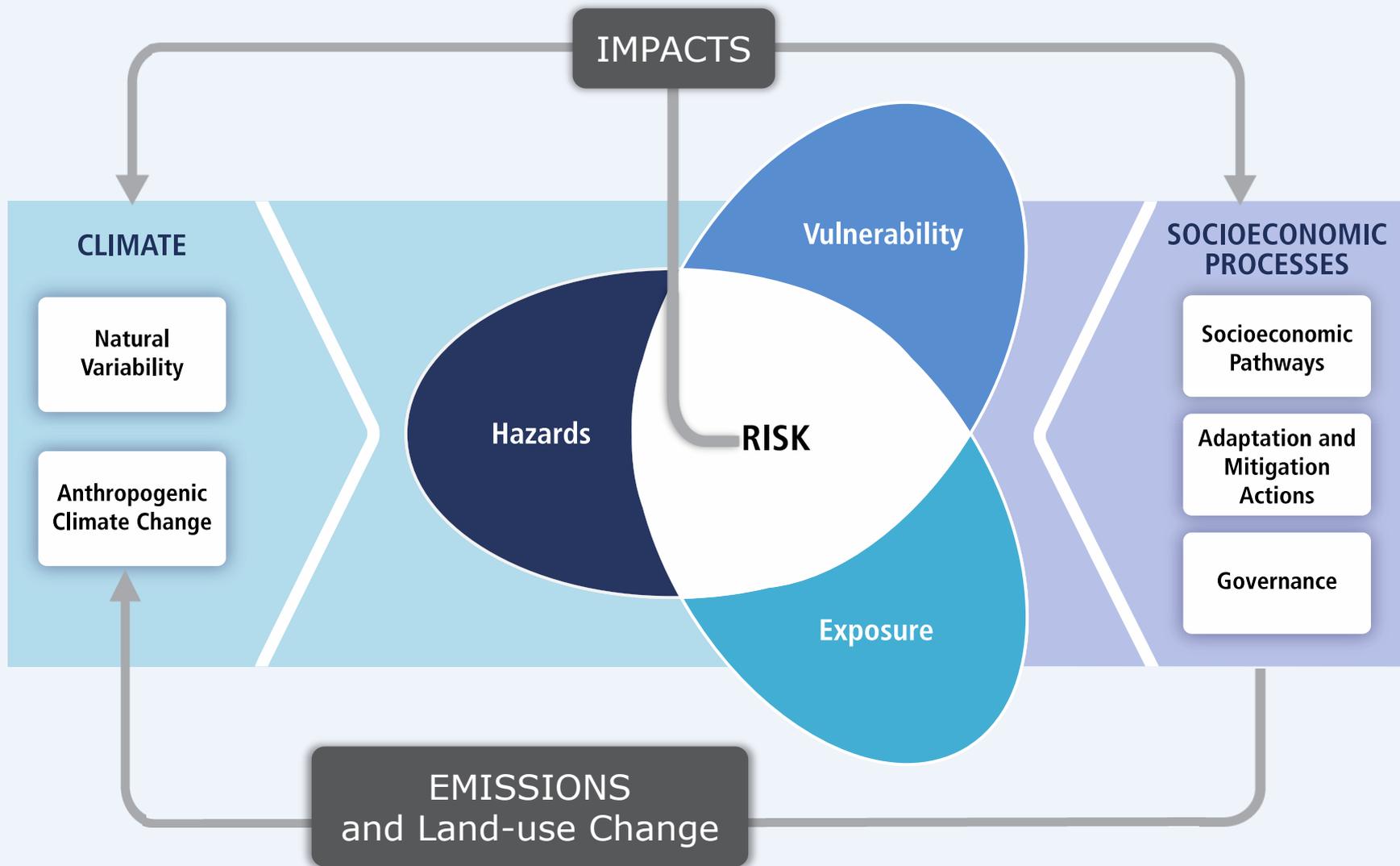
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UNDERSTANDING,  
MANAGING, &  
REDUCING RISKS









# Warming over the past century

## Observed Temperature Change



Based on trend over  
1901–2012 (°C over period)

Solid Color

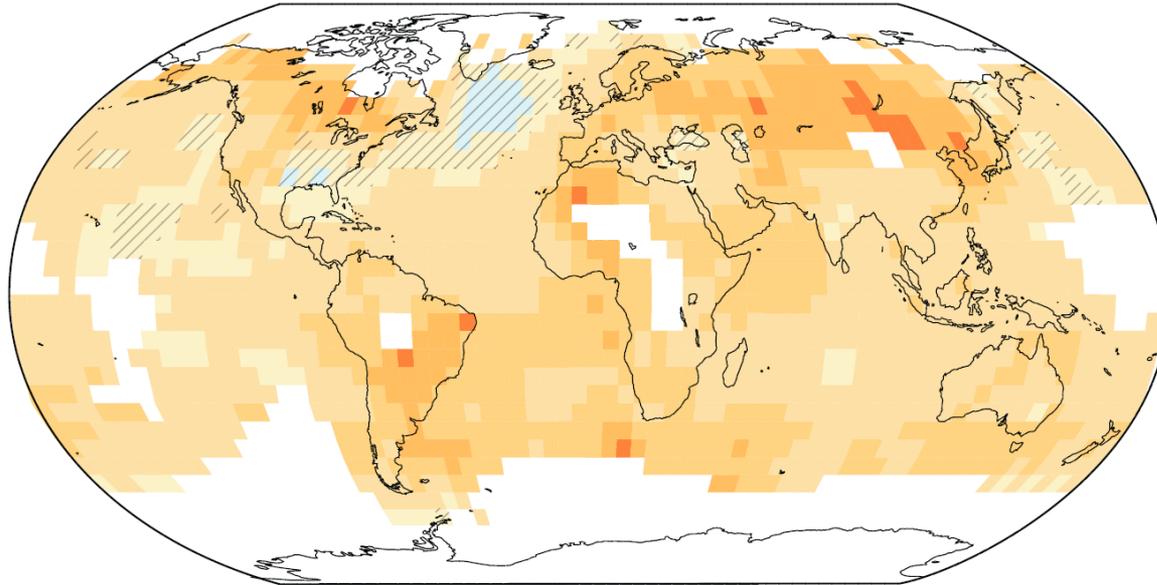
Significant  
trend

Diagonal Lines

Trend not  
statistically  
significant

White

Insufficient  
data



Based on WGII Figure SPM 4

## Worldwide Effects

atmosphere, land, ocean

extreme events

water cycle

sea ice, glaciers, ice sheets

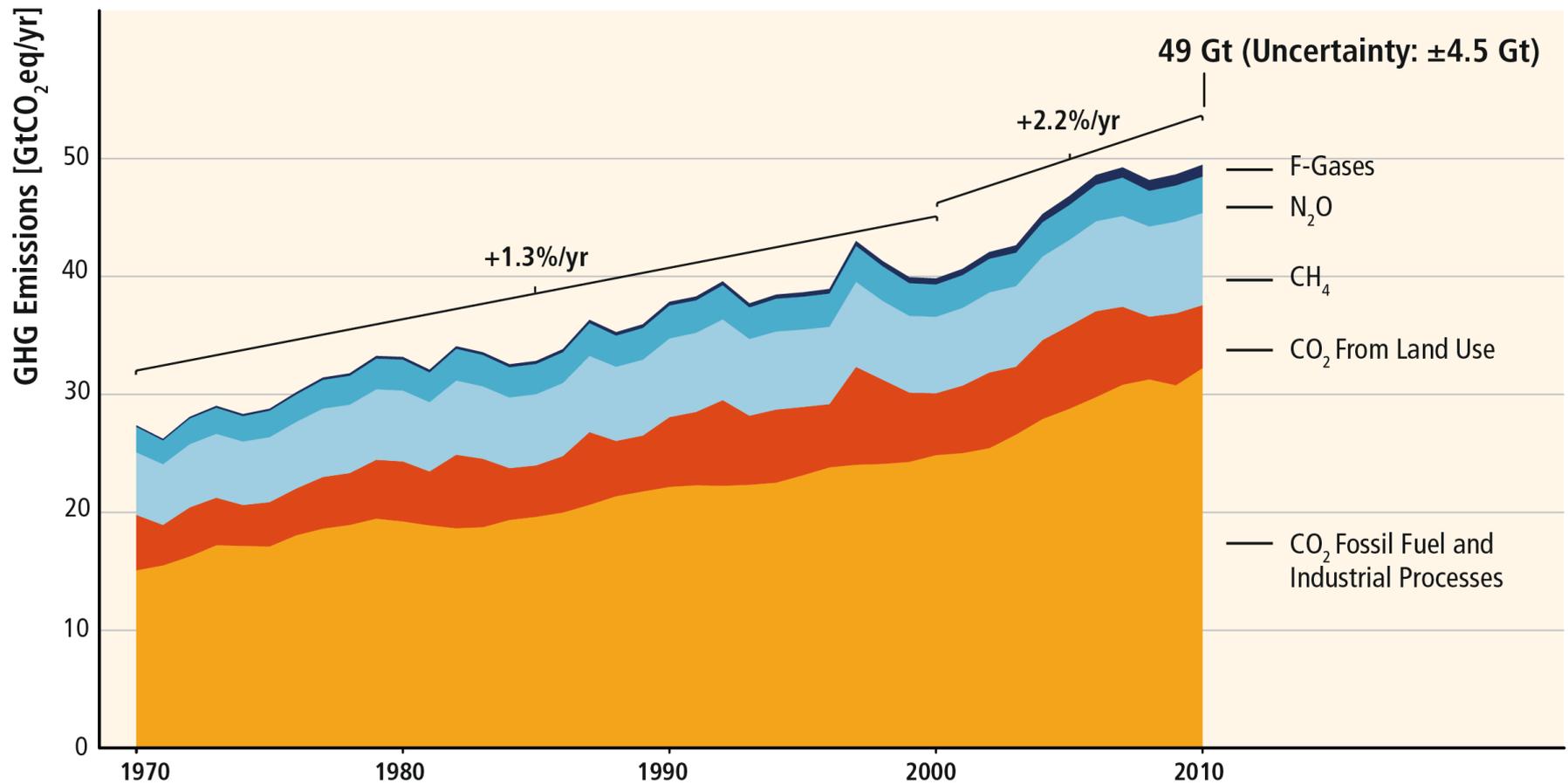
global mean sea level

Human influence  
on the climate  
system is clear



**GHG EMISSIONS GROWTH**  
**HAS ACCELERATED**  
**DESPITE REDUCTION EFFORTS**

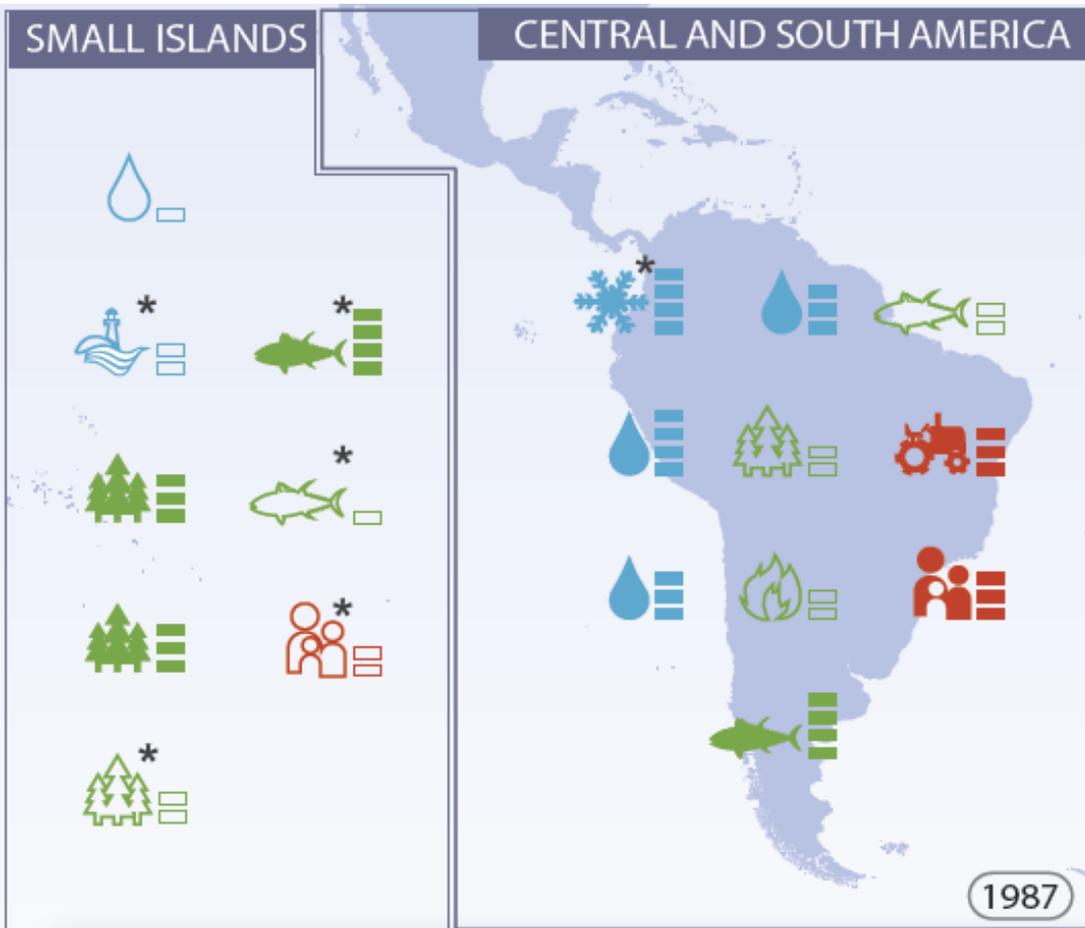
GHG emissions growth between 2000 and 2010 has been larger than in the previous three decades.



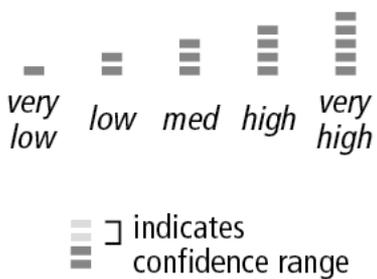
Based on WGIII Figure SPM 1

An underwater photograph of a coral reef. The water is a deep, dark green. In the center, there is a prominent, white, fan-shaped coral specimen. The surrounding reef is composed of various types of coral, including branching and table corals, in shades of brown, orange, and green. The overall scene suggests a healthy but potentially stressed reef environment.

OBSERVED IMPACTS  
OF CLIMATE CHANGE  
**ARE WIDESPREAD**  
AND CONSEQUENTIAL



**Confidence in attribution to climate change**



**Observed impacts attributed to climate change for**

**Physical systems**

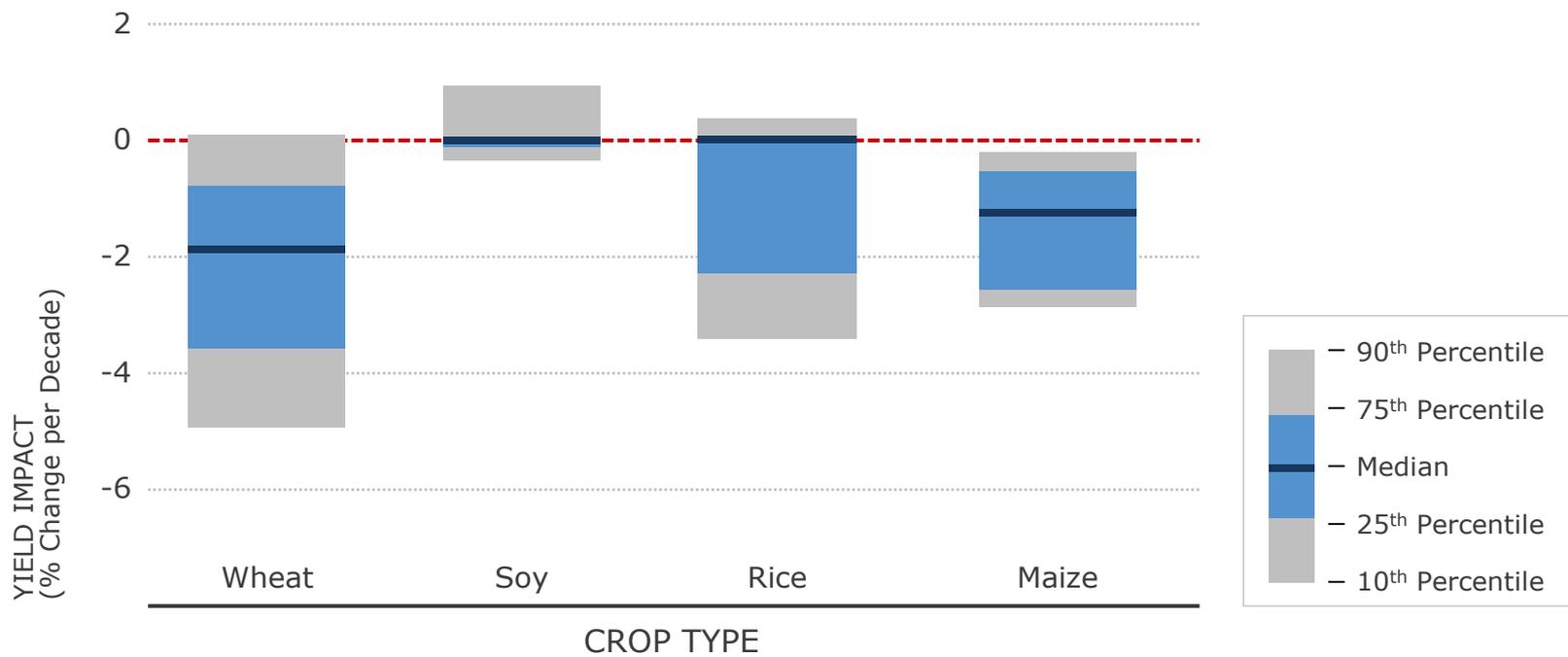


**Biological systems**



**Human and managed systems**





WGII Figure SPM 2



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# VULNERABILITY AND EXPOSURE

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# AROUND THE WORLD

A photograph of a city street completely flooded with water. The water is dark and reflects the surrounding buildings and sky. Tall brick buildings line both sides of the street. In the distance, a person in a red shirt is wading through the water, and a dark car is partially submerged. The sky is overcast and grey.

PEOPLE, SOCIETIES,  
AND ECOSYSTEMS  
AROUND THE WORLD

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**VULNERABLE  
AND EXPOSED**

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IN DIFFERENT WAYS



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# ADAPTATION IS

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# ALREADY OCCURRING

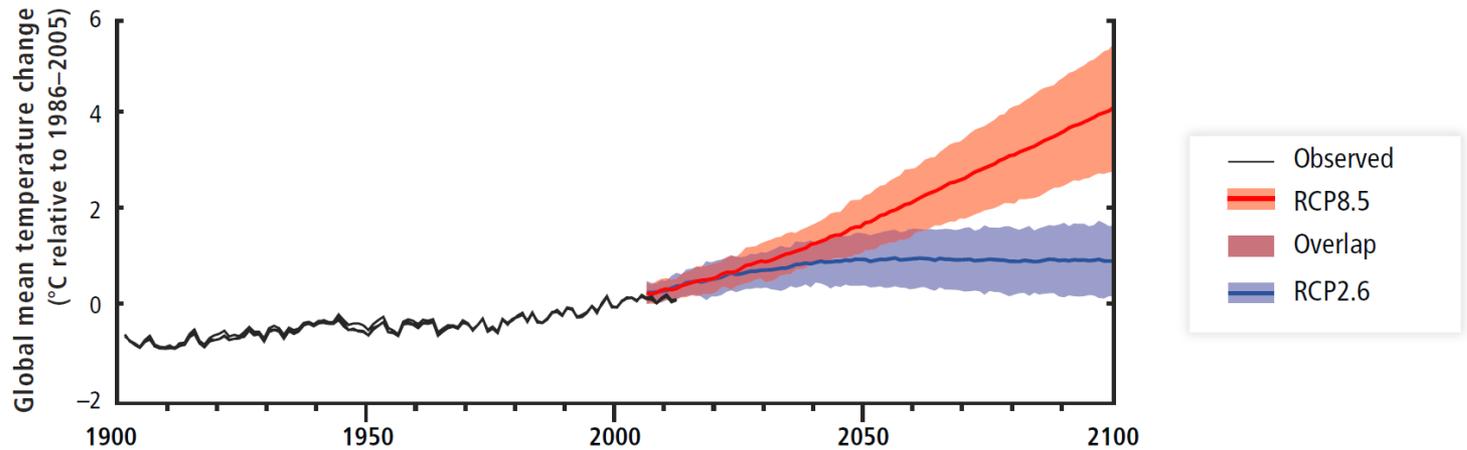


INCREASING MAGNITUDES  
OF WARMING INCREASE  
THE LIKELIHOOD OF

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**SEVERE AND  
PERVASIVE IMPACTS**

# Warming over the 21<sup>st</sup> century



## Projected Temperature Change



Difference from 1986-2005 mean (°C)

Solid Color

Very strong agreement

White Dots

Strong agreement

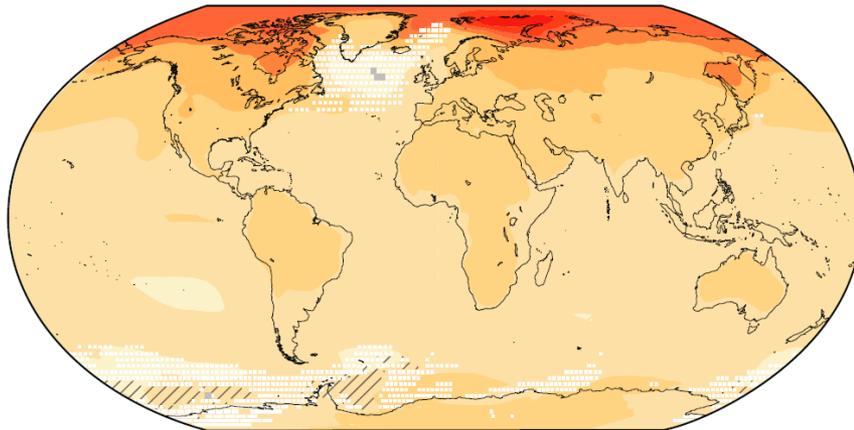
Gray

Divergent changes

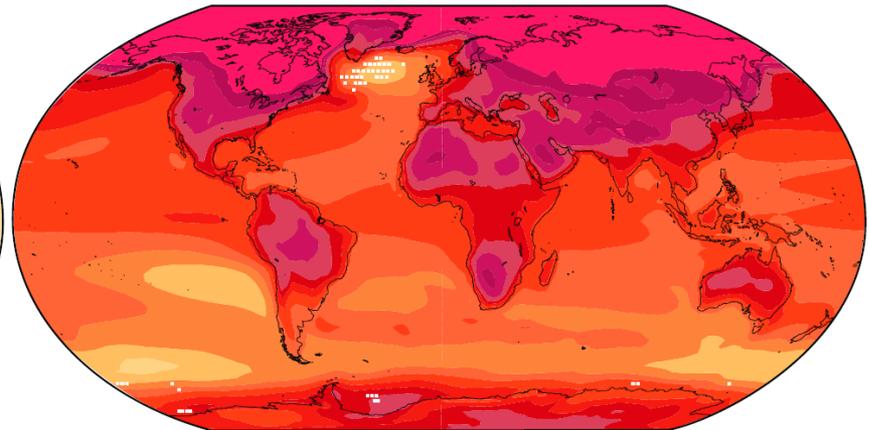
Diagonal Lines

Little or no change

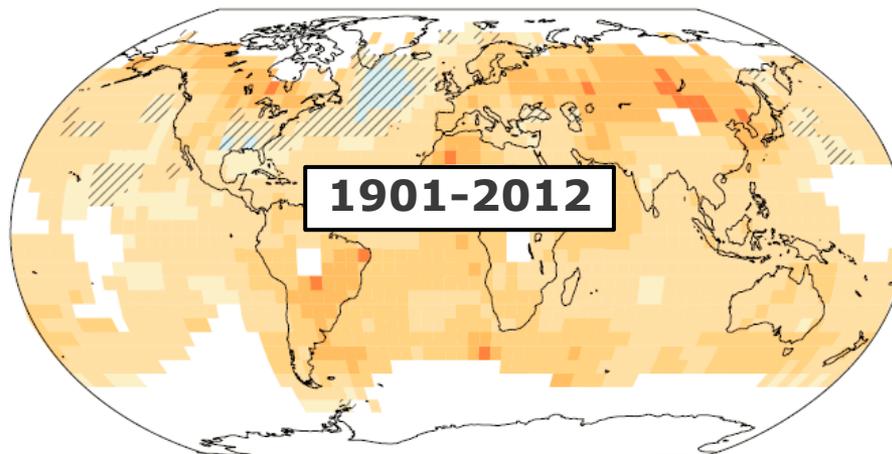
RCP2.6 2081-2100



RCP8.5 2081-2100



# Warming over the 21<sup>st</sup> century



## Projected Temperature Change



Difference from  
1986-2005 mean (°C)

Solid Color

Very strong  
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White Dots

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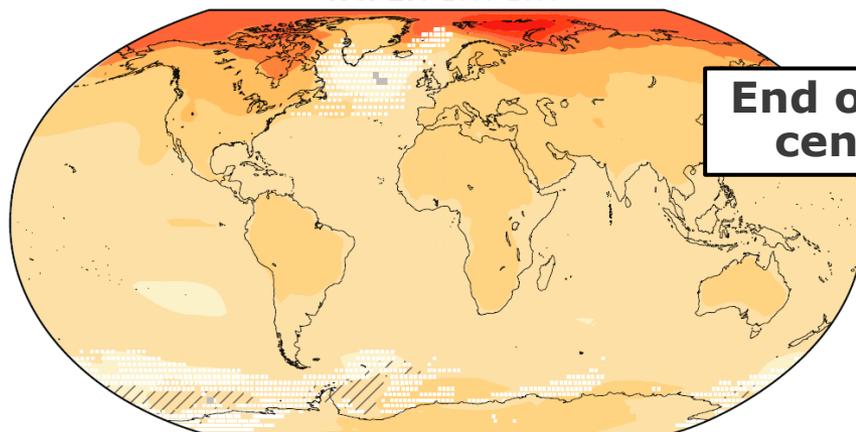
Gray

Divergent  
changes

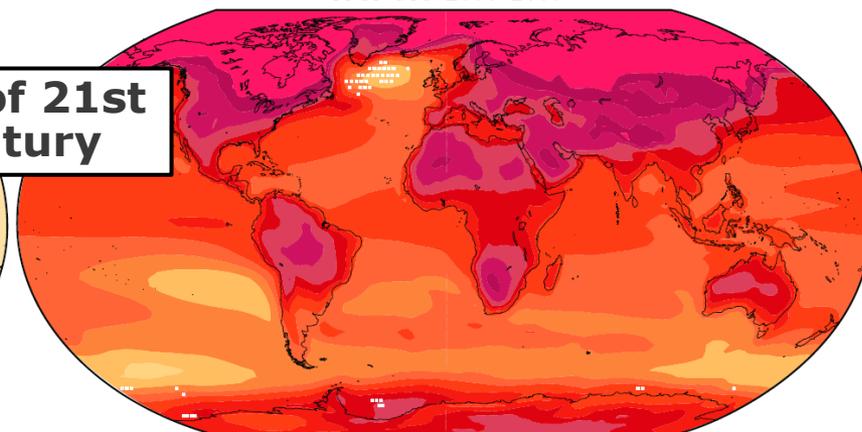
Diagonal Lines

Little or  
no change

RCP2.6 2081-2100

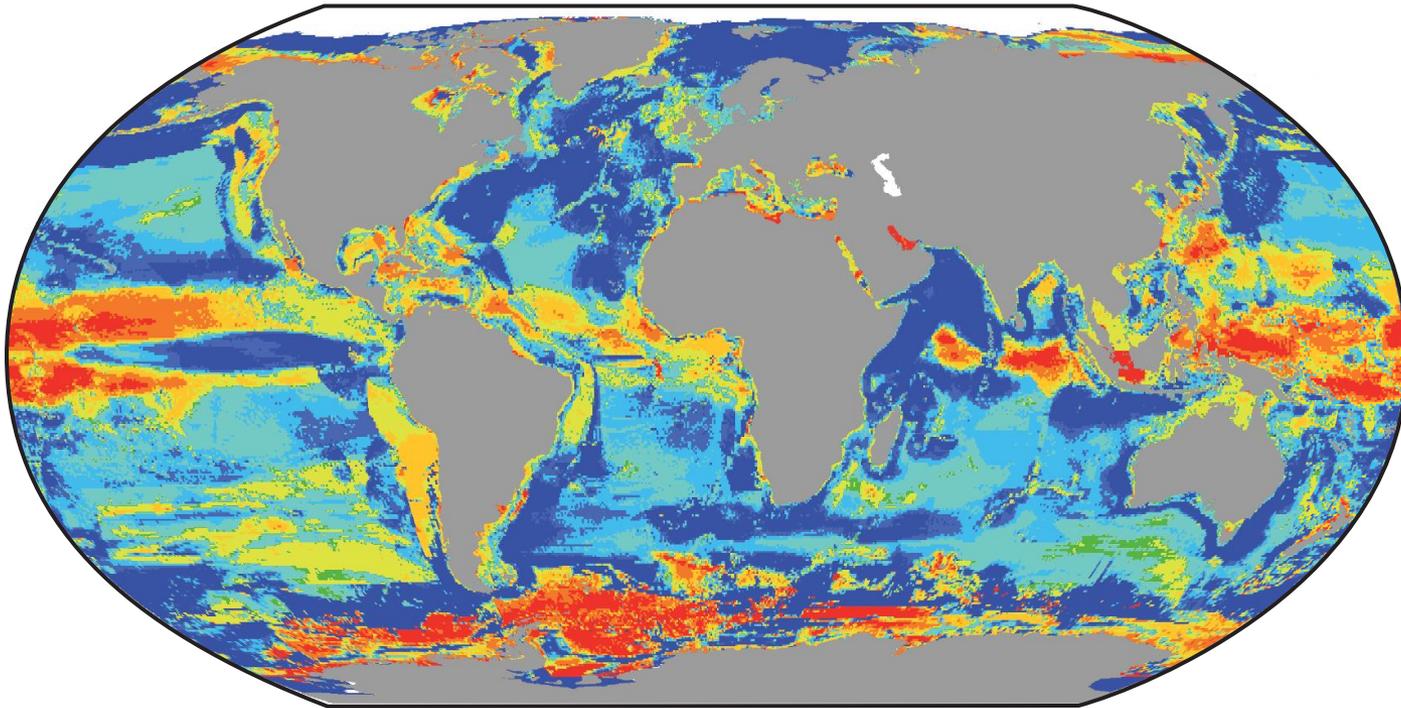


RCP8.5 2081-2100

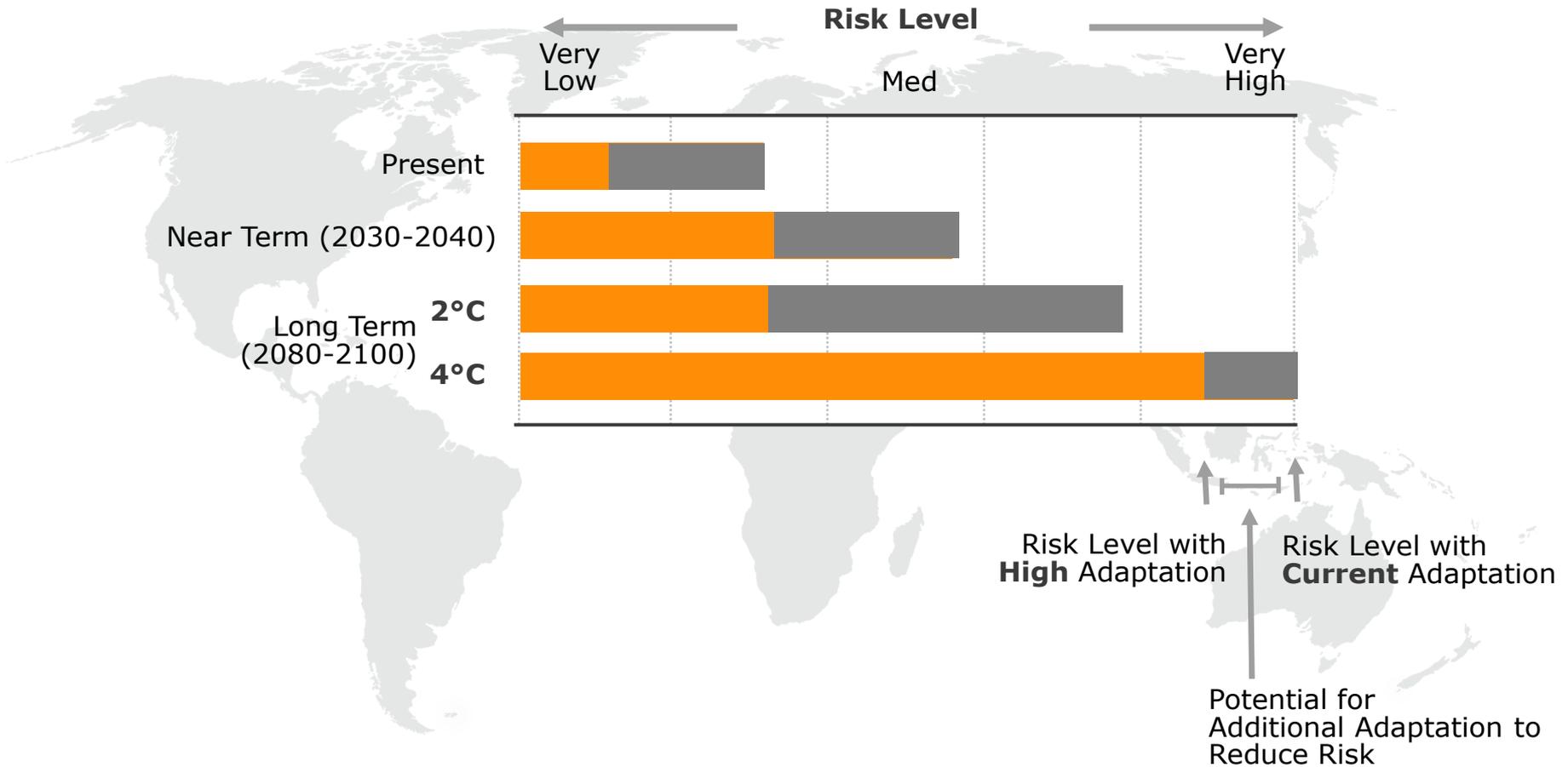


End of 21<sup>st</sup>  
century

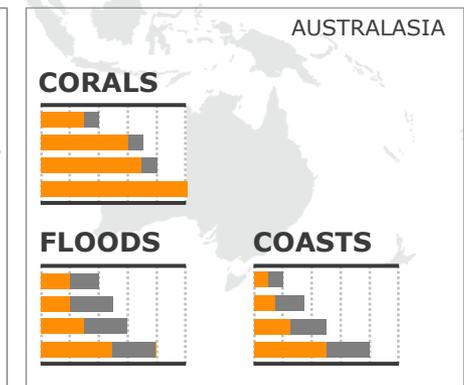
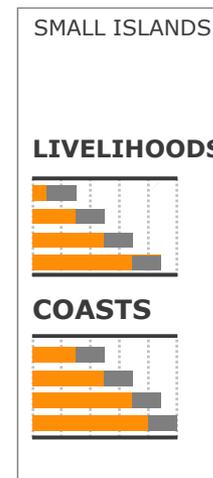
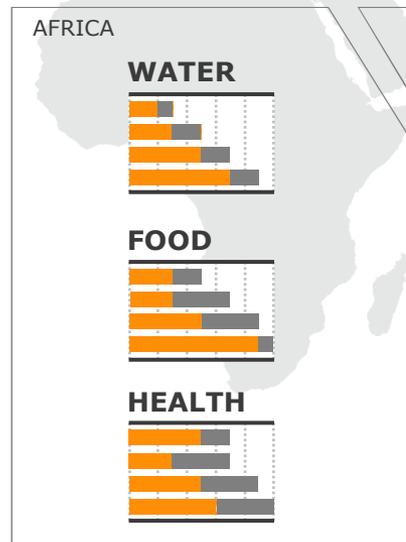
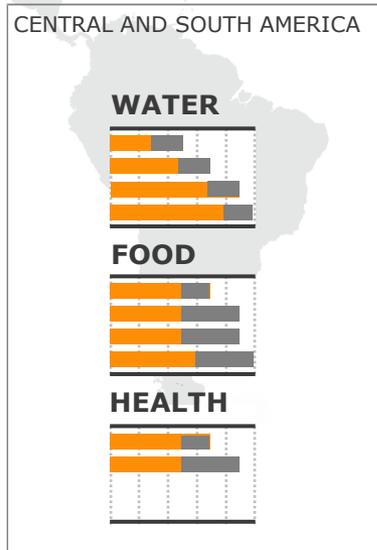
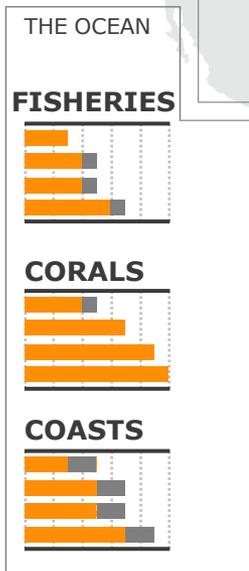
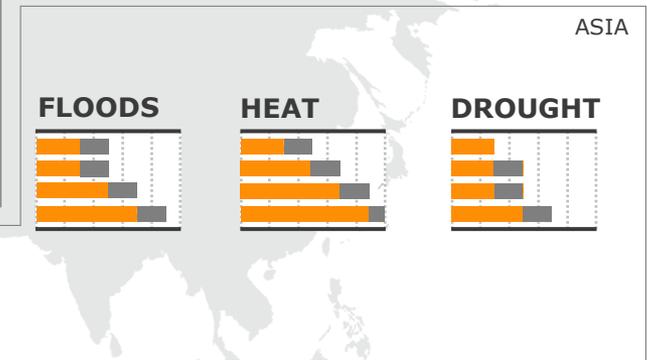
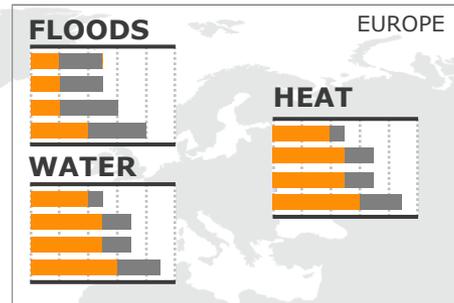
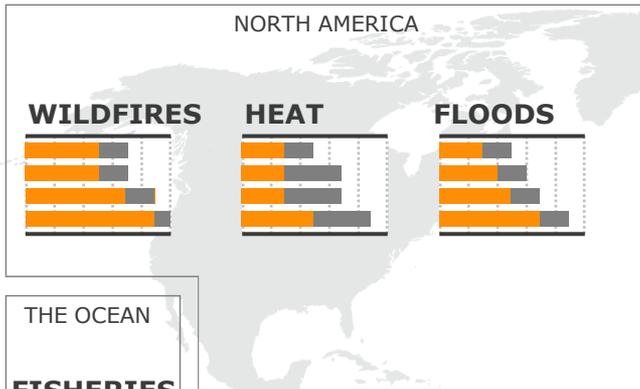
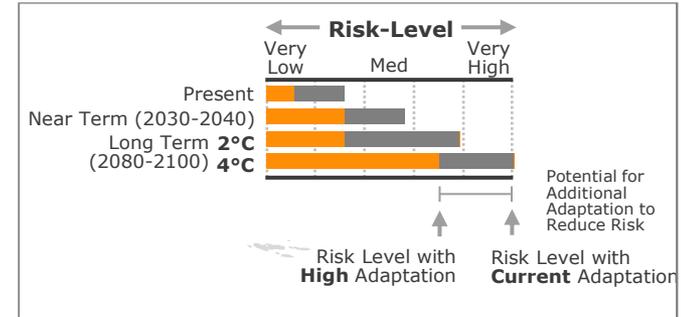
CHANGE IN MAXIMUM CATCH POTENTIAL (2051-2060 COMPARED TO 2001-2010, SRES A1B)



# Levels of Risk and Potential for Adaptation



# Key Risks Around the World



# Central and South America



Water availability;  
flooding and land slides

Decreased food security  
& agricultural income

Spread of vector-borne  
diseases

Climatic drivers	Timeframe	Risk & potential for adaptation			
		Very low	Medium	Very high	
	Present	[Progress bar: ~25% in orange, ~75% in hatched]			
	Near term (2030-2040)	[Progress bar: ~45% in orange, ~55% in hatched]			
	Long term (2080-2100)	2°C	[Progress bar: ~75% in orange, ~25% in hatched]		
		4°C	[Progress bar: ~95% in orange, ~5% in hatched]		
	Present	[Progress bar: ~45% in orange, ~55% in hatched]			
	Near term (2030-2040)	[Progress bar: ~65% in orange, ~35% in hatched]			
	Long term (2080-2100)	2°C	[Progress bar: ~75% in orange, ~25% in hatched]		
		4°C	[Progress bar: ~55% in orange, ~45% in hatched]		
	Present	[Progress bar: ~45% in orange, ~55% in hatched]			
	Near term (2030-2040)	[Progress bar: ~65% in orange, ~35% in hatched]			
	Long term (2080-2100)	2°C	not available		
		4°C	not available		

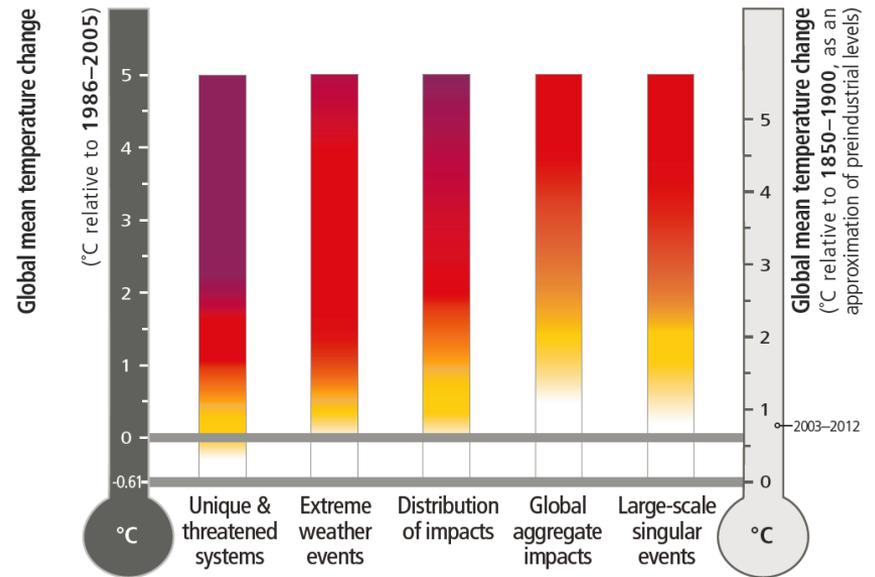
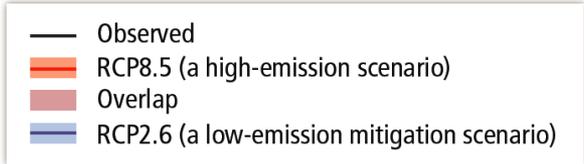
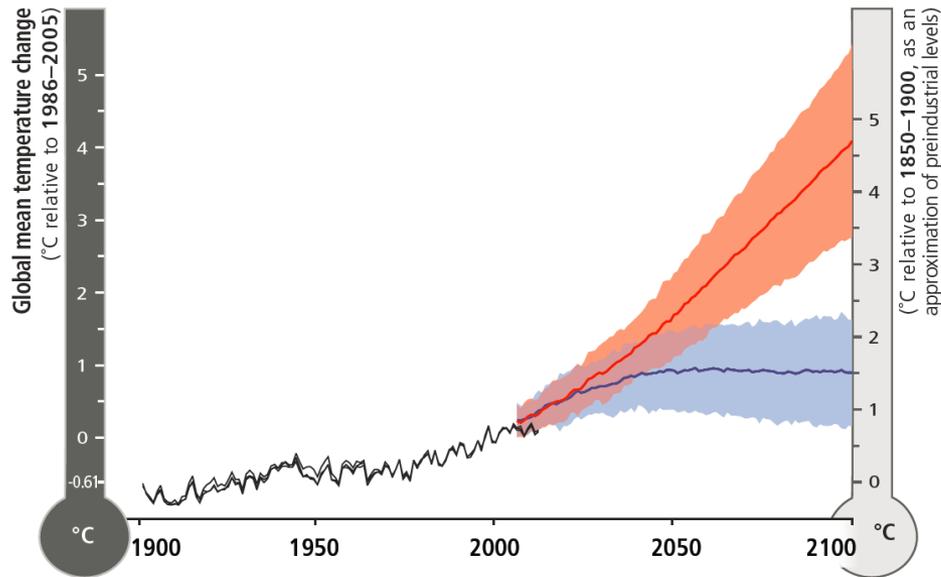
# Small Islands

Loss of livelihoods,  
communities, & ecosystems

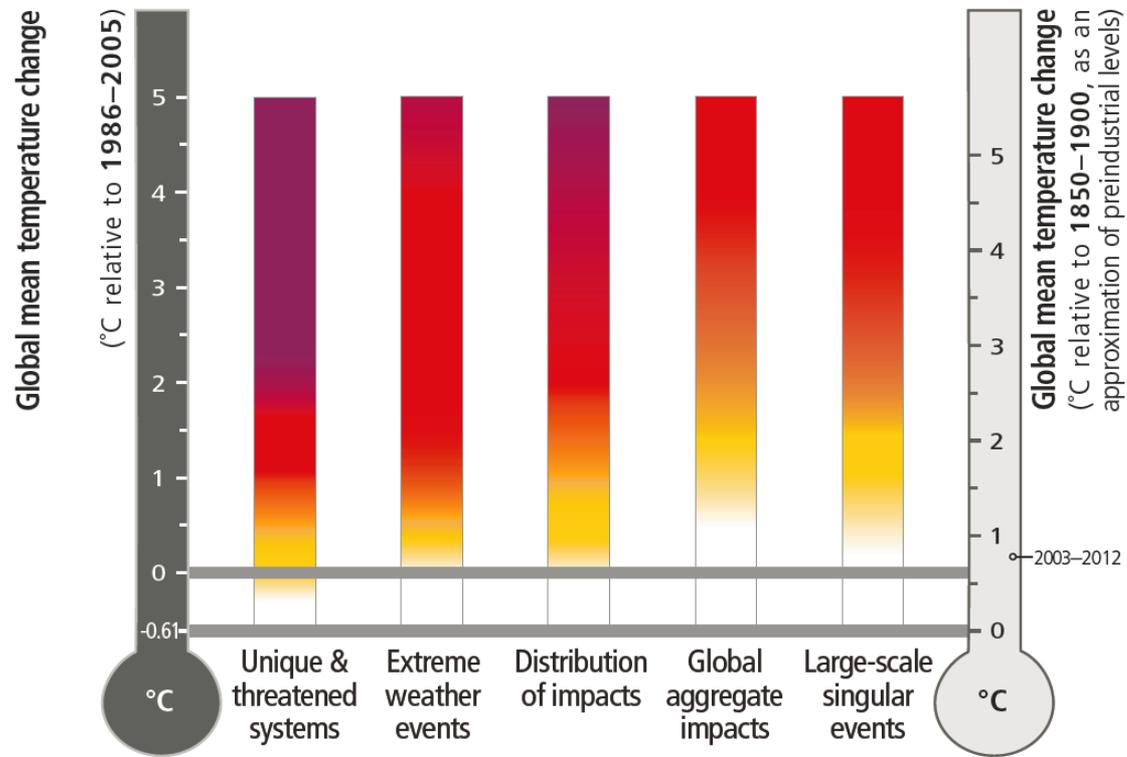
Rising sea level

Climatic drivers	Timeframe	Risk & potential for adaptation			
		Very low	Medium	Very high	
	Present	[Progress bar: ~25% in orange]			
	Near term (2030–2040)	[Progress bar: ~50% in orange]			
	Long term (2080–2100)	2°C	[Progress bar: ~75% in orange]		
		4°C	[Progress bar: ~95% in orange]		
	Present	[Progress bar: ~40% in orange]			
	Near term (2030–2040)	[Progress bar: ~60% in orange]			
	Long term (2080–2100)	2°C	[Progress bar: ~85% in orange]		
		4°C	[Progress bar: ~95% in orange]		

# A global perspective on risks



Based on WGII Box SPM 1 Figure 1



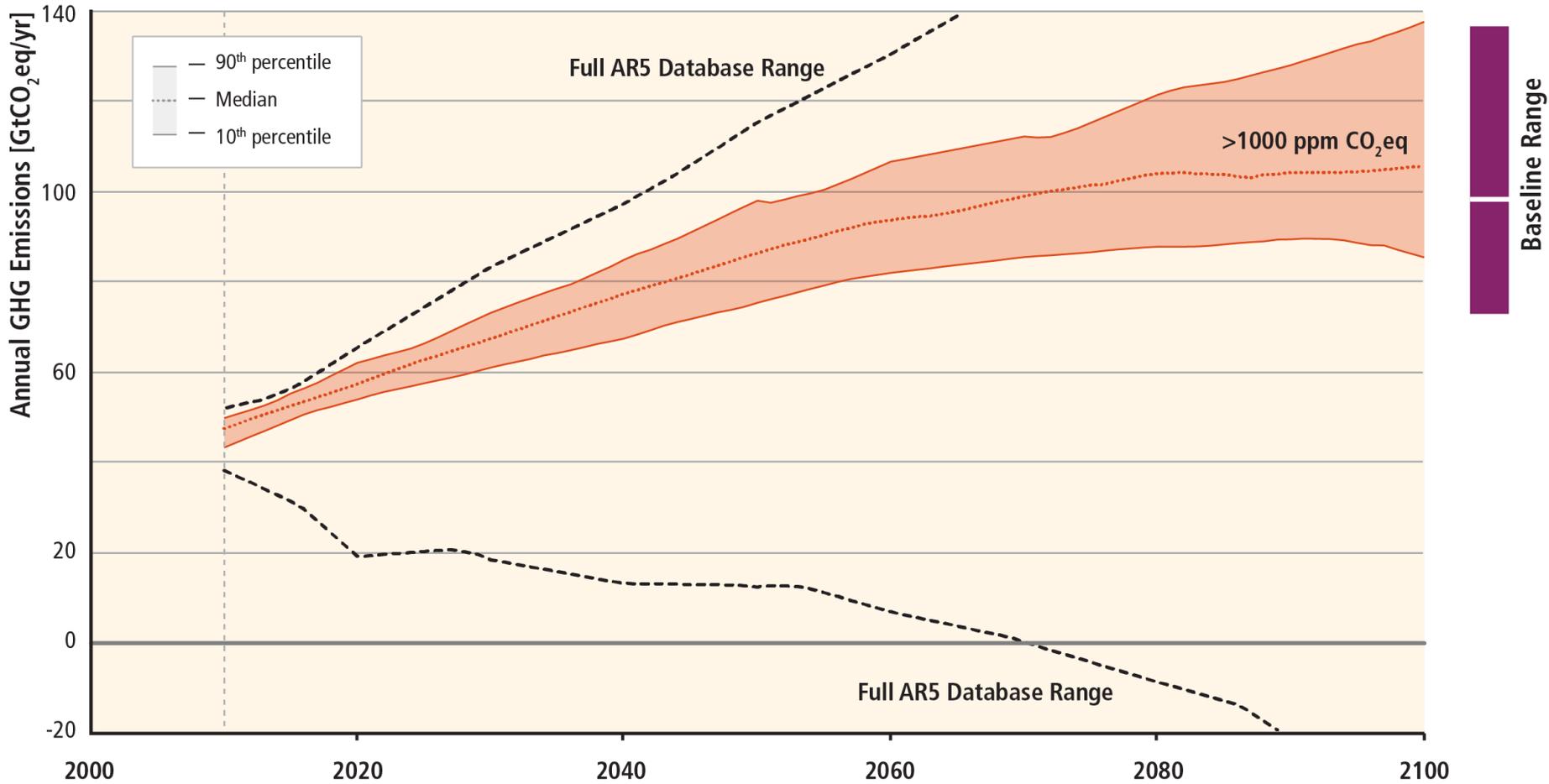
Based on WGII  
Box SPM 1 Figure 1

An aerial photograph of a dense urban landscape, likely Hong Kong, featuring a complex multi-level highway interchange in the foreground and a dense cluster of skyscrapers in the background. The sky is a deep, hazy blue, suggesting a clear but slightly overcast day. The overall color palette is dominated by blues, greys, and the warm tones of the city buildings.

# LIMITING WARMING TO 2°C INVOLVES SUBSTANTIAL TECHNOLOGICAL, ECONOMIC AND INSTITUTIONAL CHALLENGES

# Stabilizing temperature (eventually) requires zero net emissions – regardless of the warming limit chosen

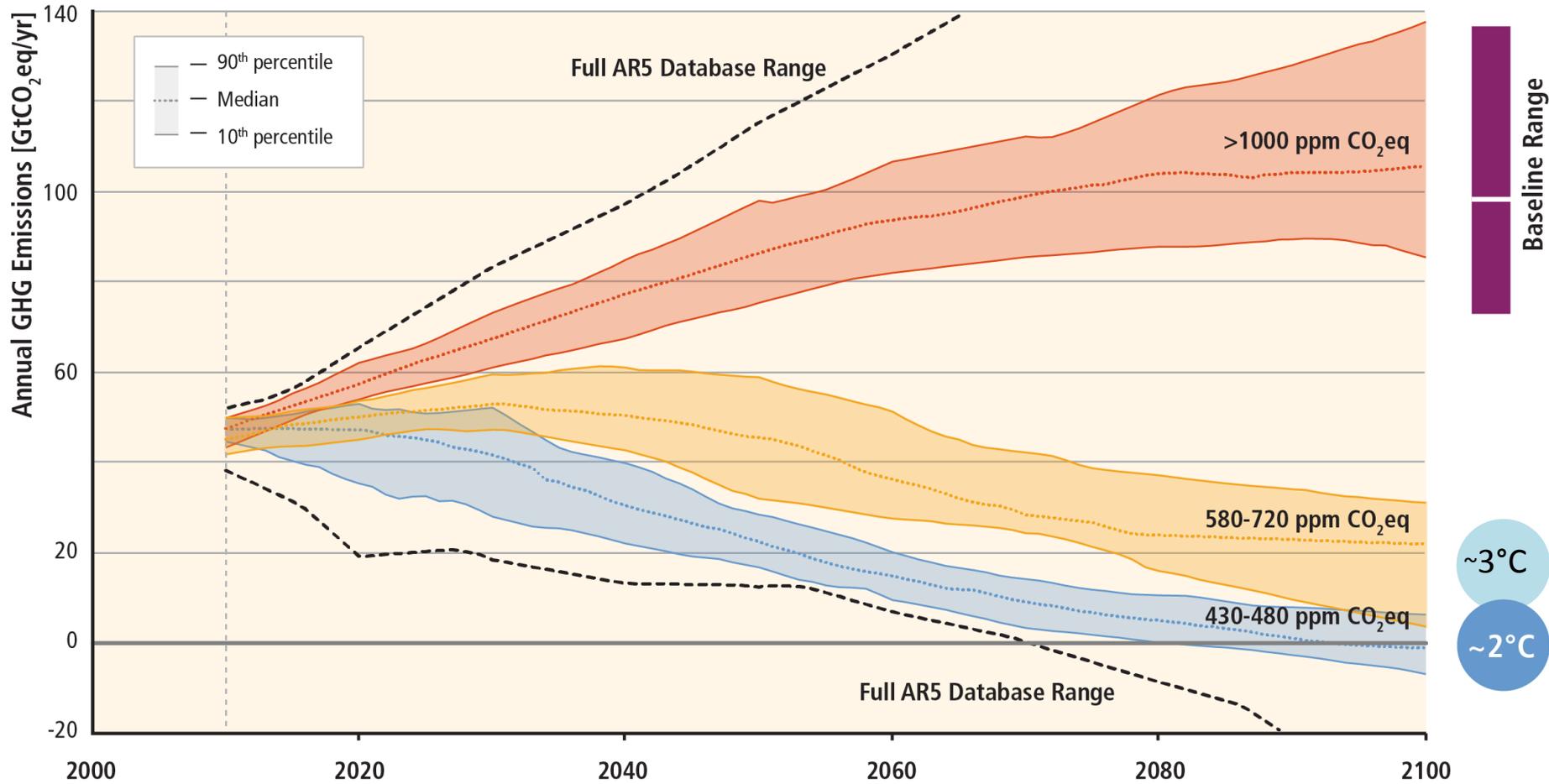
– regardless of the warming limit chosen



Based on WGIII Figure SPM 4

# Stabilizing temperature (eventually) requires zero net emissions – regardless of the warming limit chosen

– regardless of the warming limit chosen



Based on WGIII Figure SPM 4



INCREASING FRACTION OF  
EMISSIONS COVERED BY  
**MITIGATION PLANS**  
AND STRATEGIES



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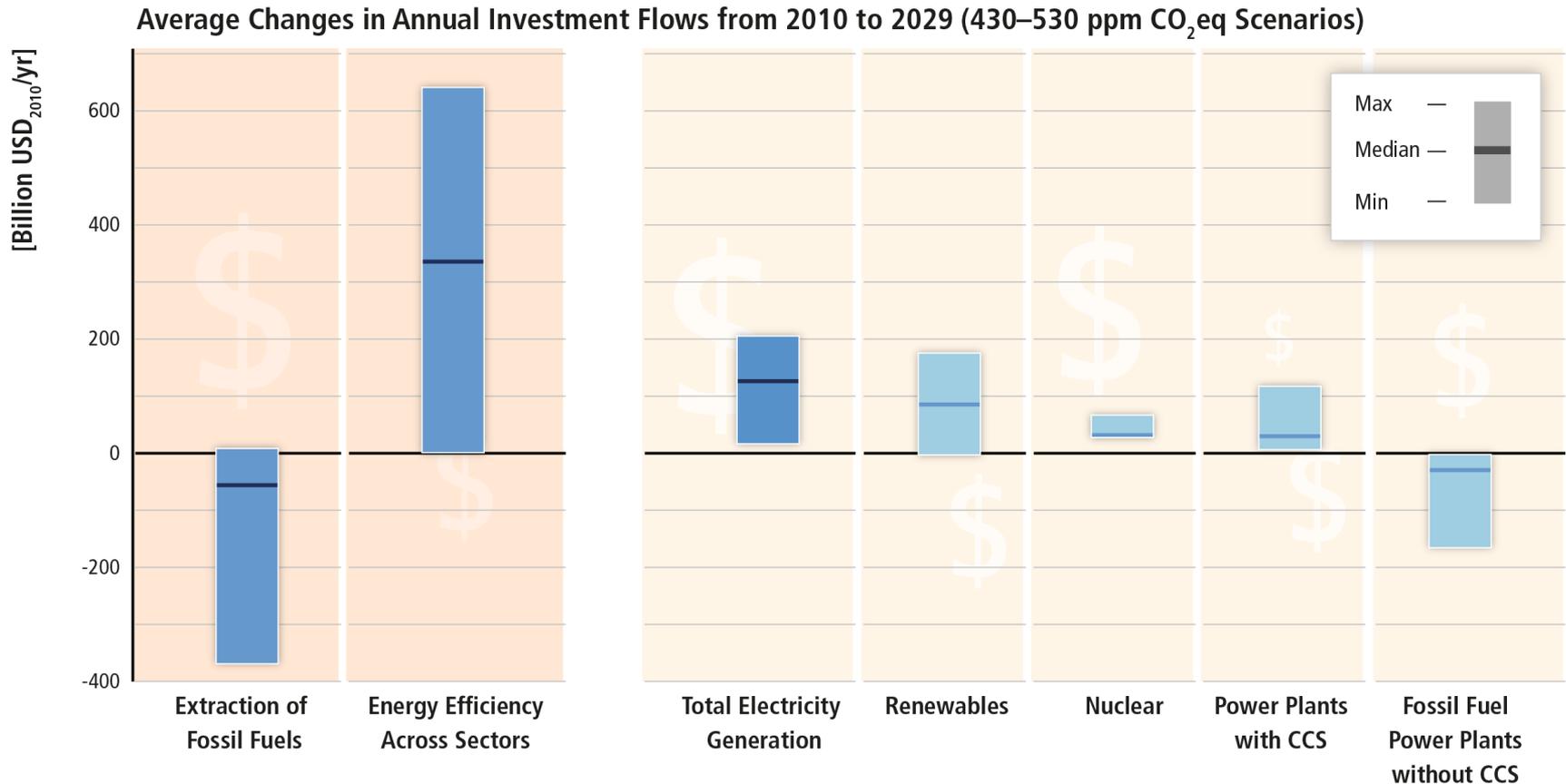
# EFFECTIVE CLIMATE CHANGE RESPONSES

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A MORE VIBRANT WORLD



# Substantial emissions reductions linked to new investments



Based on WGIII Figure SPM 9



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# CLIMATE CHANGE

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UNDERSTANDING,  
MANAGING, &  
REDUCING RISKS