IPCC Fifth Assessment Report (AR5) Synthesis Report: Key Findings

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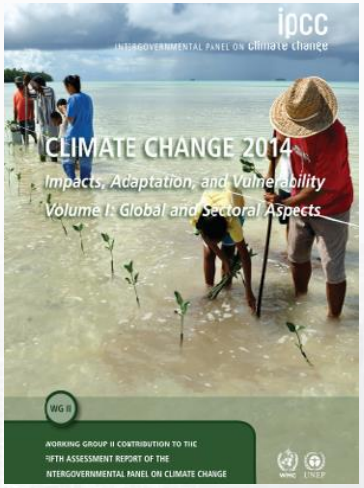
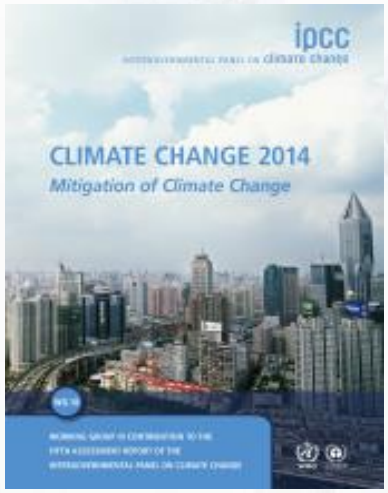
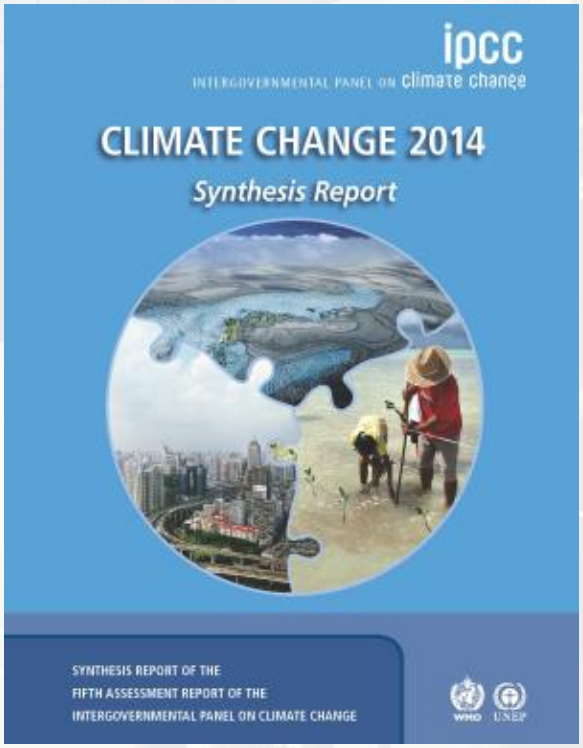
AR5 WGI 2013



AR5 WGII 2014



AR5 WGIII 2014



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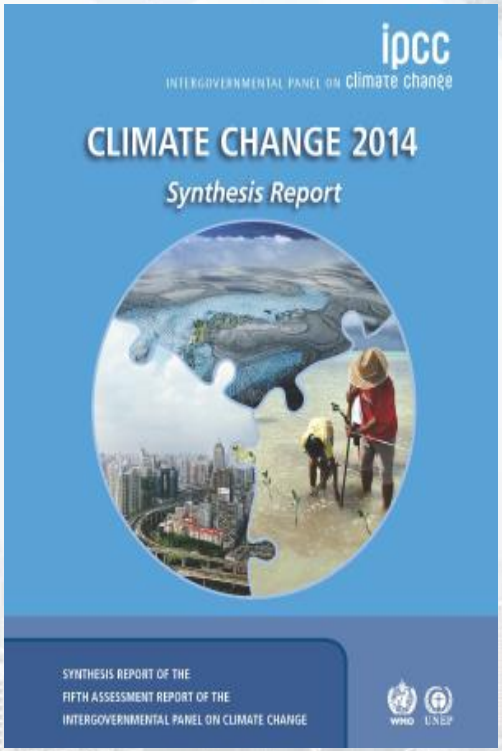
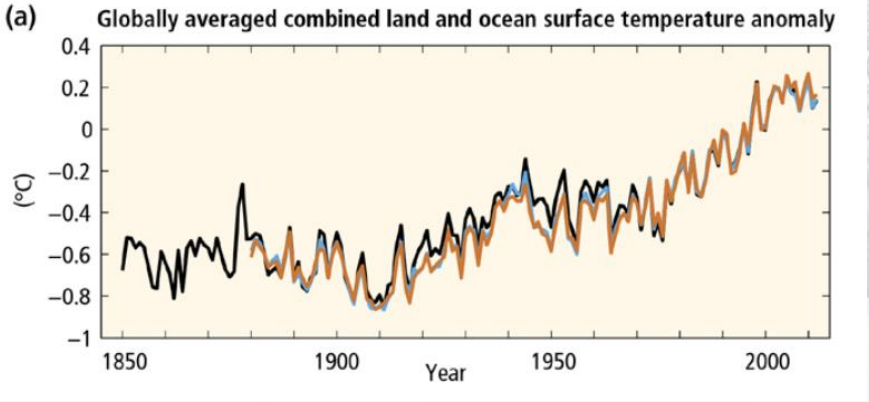
Key Messages

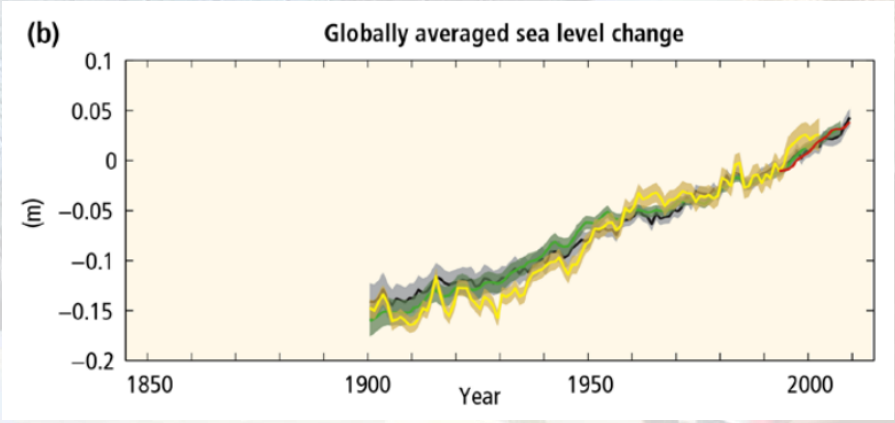


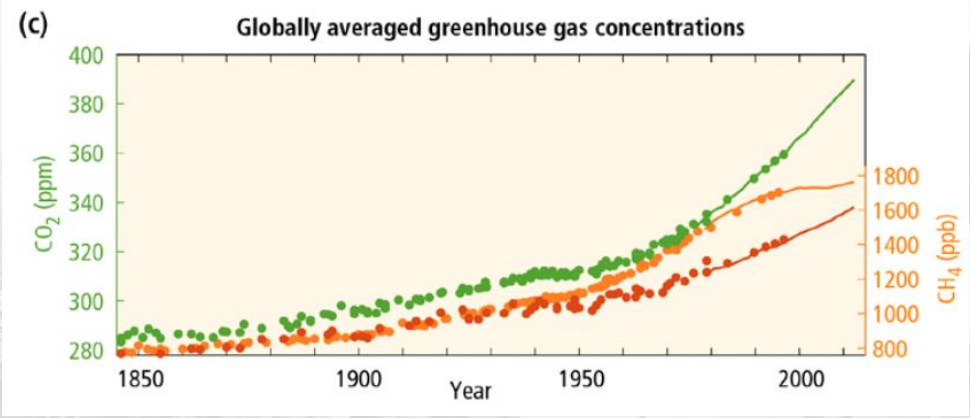
- ➜ **Human influence on the climate system is clear**
- ➜ **The more we disrupt our climate, the more we risk severe, pervasive and irreversible impacts**
- ➜ **We have the means to limit climate change and build a more prosperous, sustainable future**

AR5 WGI SPM, AR5 WGII SPM, AR5 WGIII SPM

Warming of the climate system is unequivocal

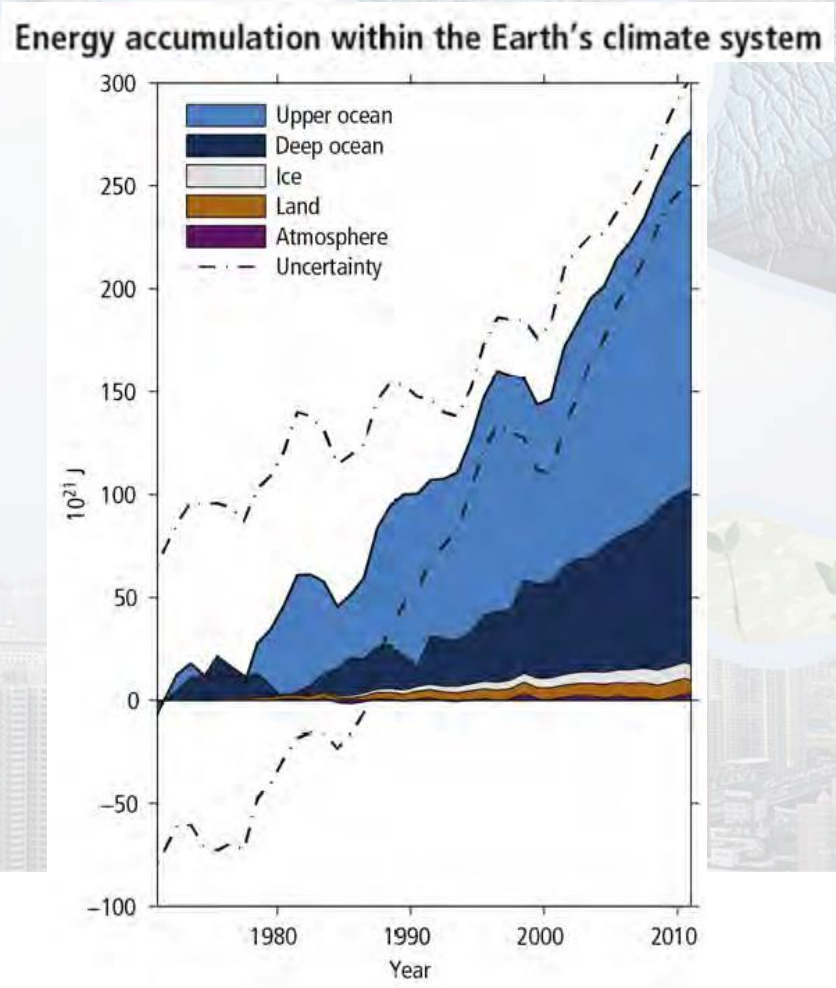






AR5 SYR SPM.1

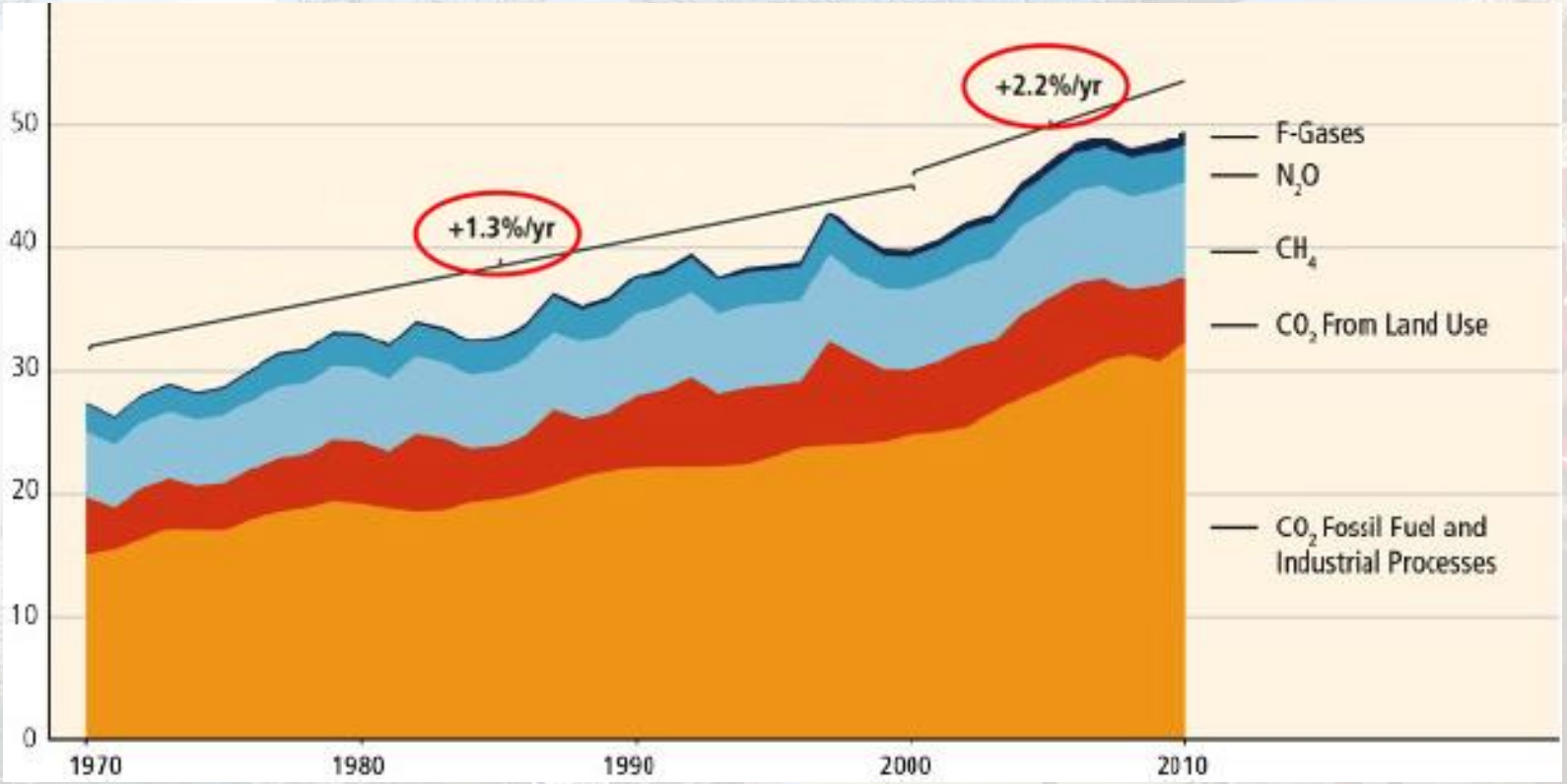
Oceans absorb most of the heat



- More than 90% of the energy accumulating in the climate system between 1971 and 2010 has accumulated in the ocean
- Land temperatures remain at historic highs while ocean temperatures continue to climb

AR5 SYR

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



AR5 SYR SPM.2; AR5 WGIII SPM

Sources of emissions

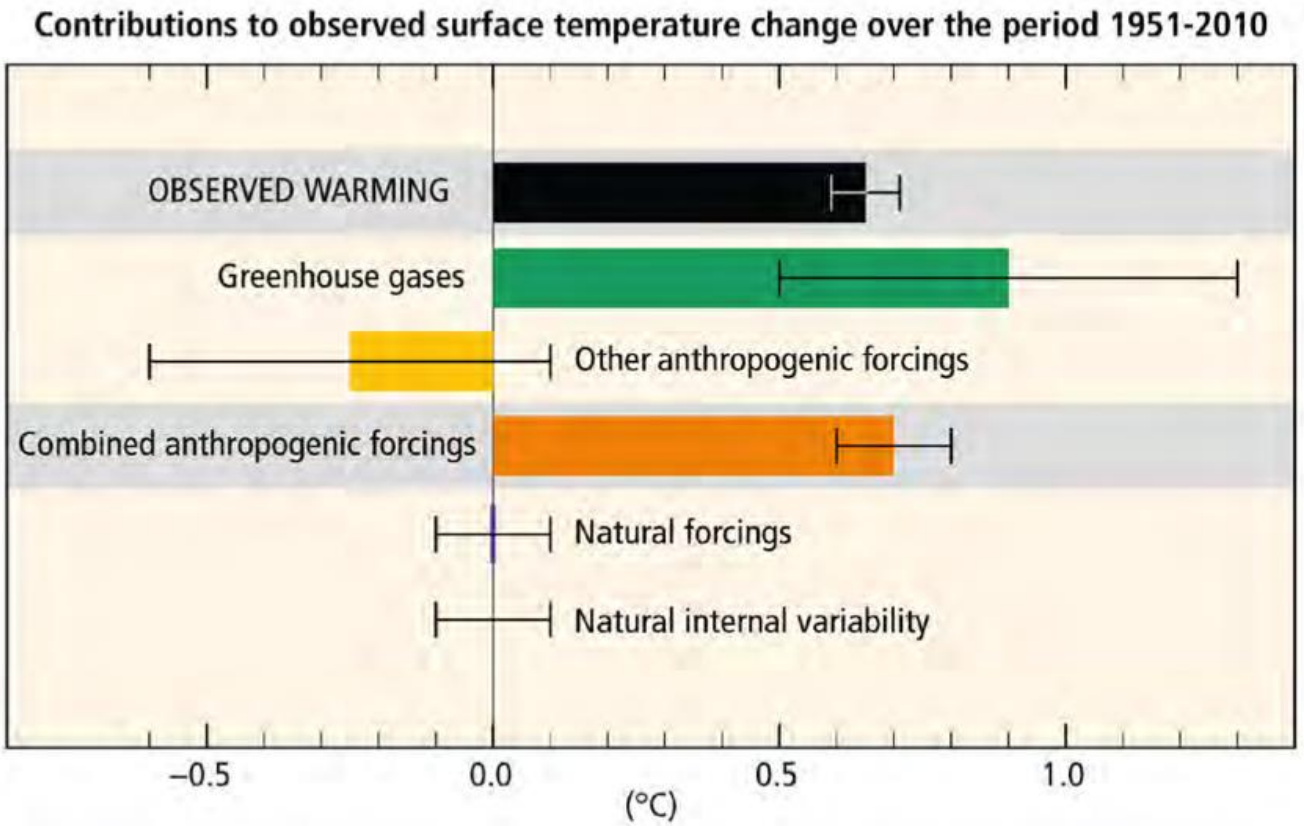
Energy production remains the primary driver of GHG emissions

2010 GHG emissions

AR5 WGIII SPM

Humans are changing the climate

It is *extremely likely* that we are the dominant cause of warming since the mid-20th century



AR5 SYR SPM.3

Impacts are already underway

- Tropics to the poles
- On all continents and in the ocean
- Affecting rich and poor countries




AR5 SYR SPM; AR5 WGII SPM

Projected climate changes

Continued emissions of greenhouse gases will cause further warming and changes in the climate system

Oceans will continue to warm during the 21st century

Global mean sea level will continue to rise during the 21st century

It is very likely that the Arctic sea ice cover will continue to shrink and thin as global mean surface temperature rises

Global glacier volume will further decrease

AR5 WGI SPM

Potential Impacts of Climate Change

Food and water shortages

Increased displacement of people

Increased poverty

Coastal flooding

AR5 WGII SPM

Limiting Temperature Increase to 2˚C

Measures exist to achieve the substantial emissions reductions required to limit likely warming to 2˚ C

A combination of adaptation and substantial, sustained reductions in greenhouse gas emissions can limit climate change risks

Implementing reductions in greenhouse gas emissions poses substantial technological, economic, social, and institutional challenges

But delaying mitigation will substantially increase the challenges associated with limiting warming to 2˚ C

AR5 WGI SPM, AR5 WGII SPM,AR5 WGIII SPM

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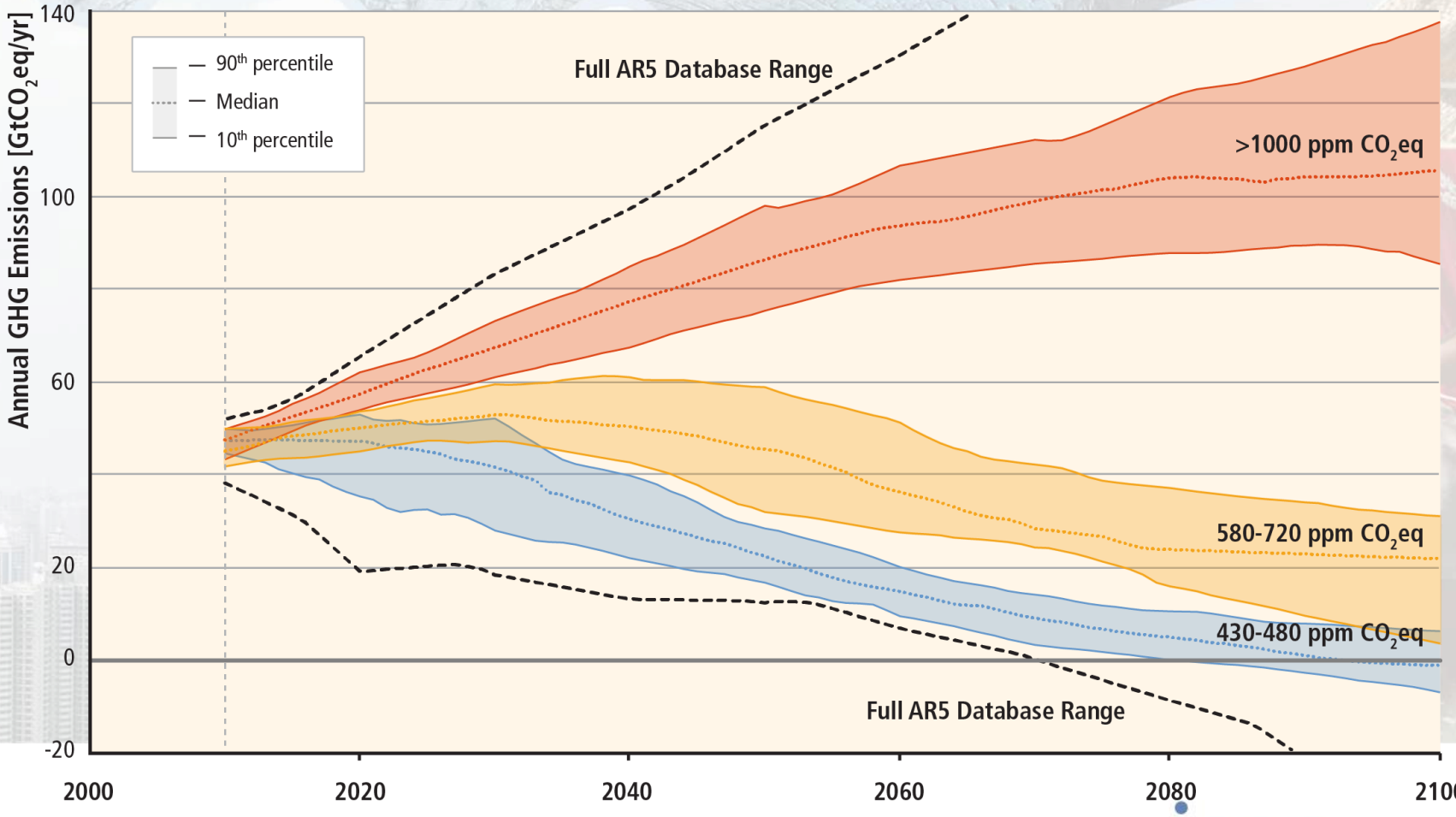
Stabilization of atmospheric concentrations requires moving away from the baseline – regardless of the mitigation goal.



Based on Figure 6.7

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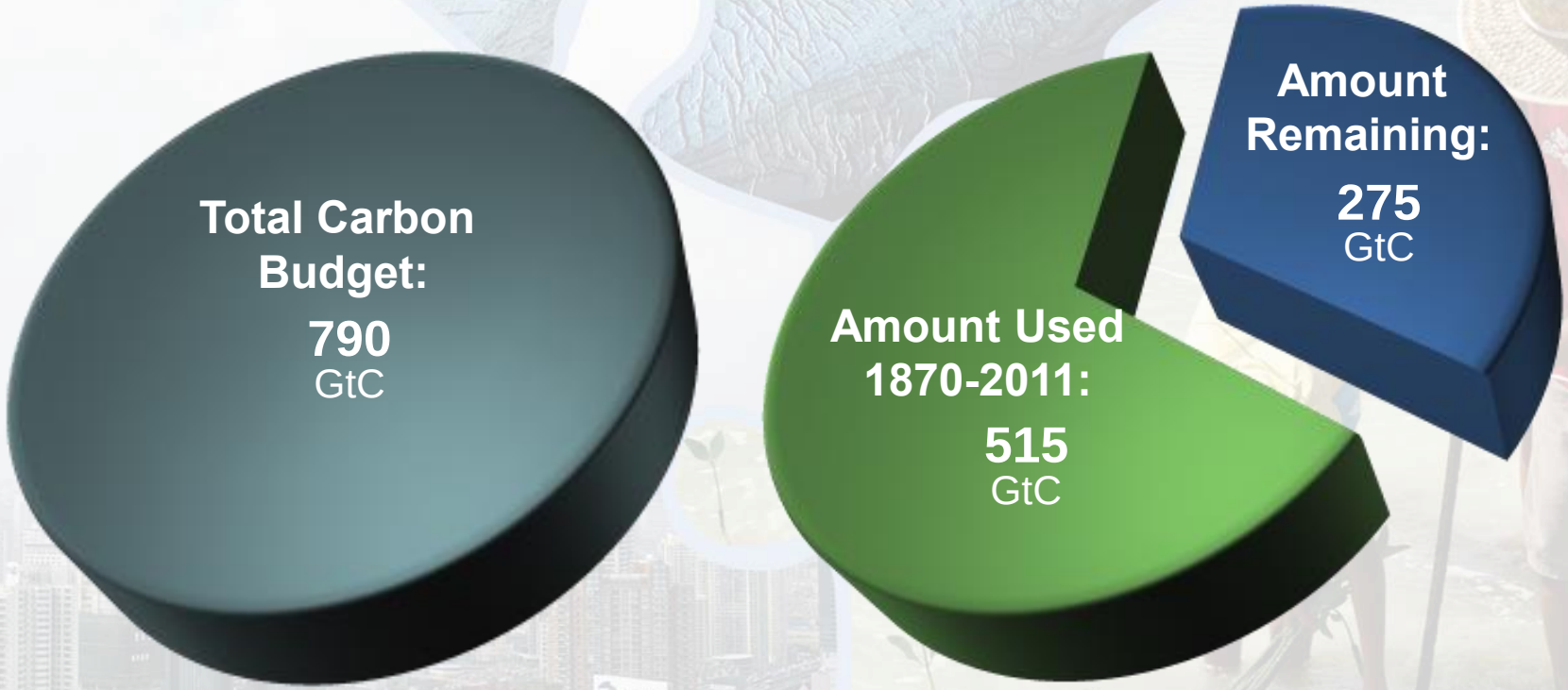
The window for action is rapidly closing

65% of our carbon budget compatible with a 2° C goal already used



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Mitigation Measures

More efficient use of energy

Greater use of low-carbon and no-carbon energy

- Many of these technologies exist today

Improved carbon sinks

- Reduced deforestation and improved forest management and planting of new forests
- Bio-energy with carbon capture and storage

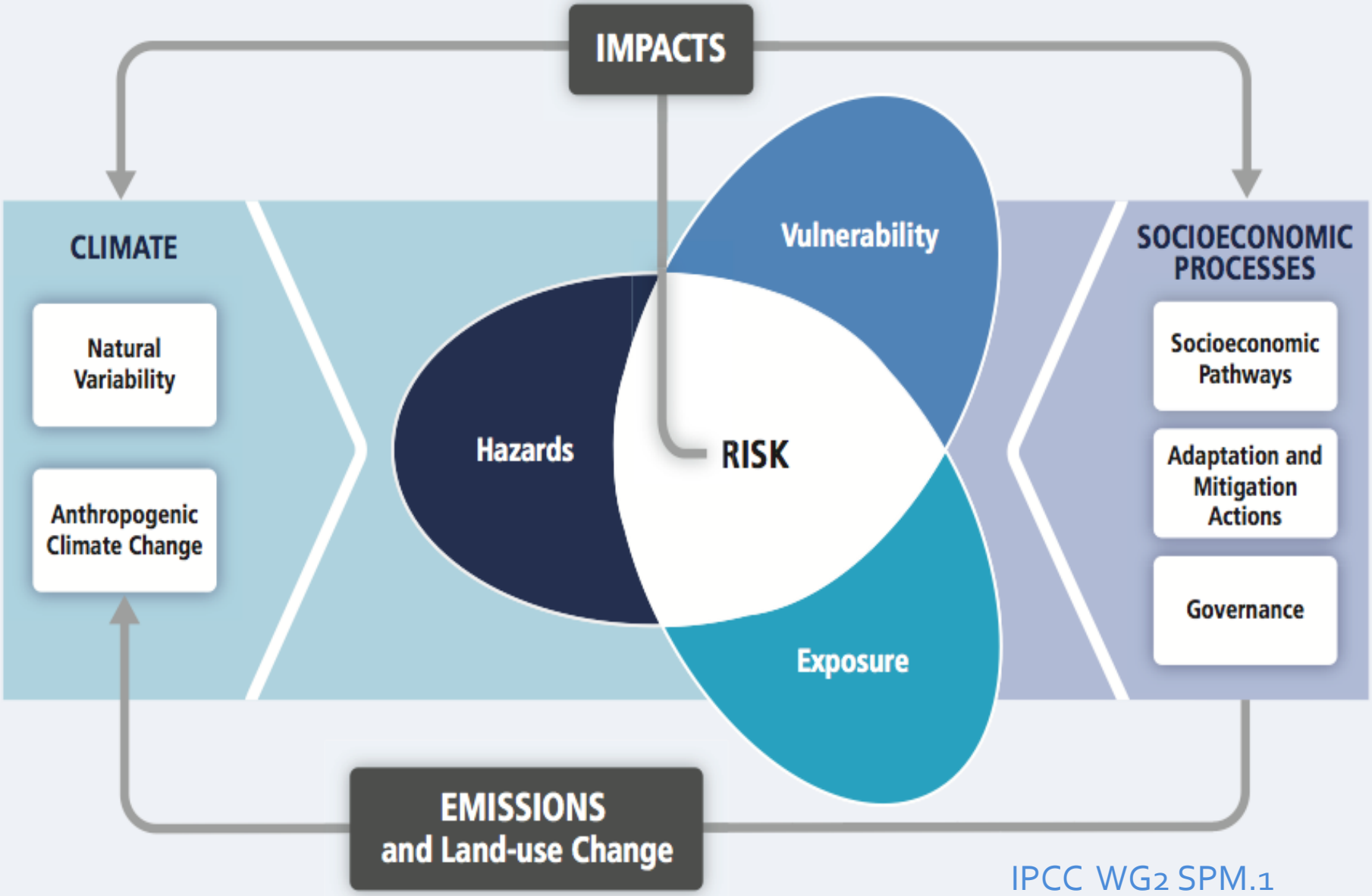
Lifestyle and behavioural changes

AR5 WGIII SPM

Ambitious Mitigation Is Affordable

- Economic growth reduced by ~ 0.06%
  (BAU growth 1.6 - 3%)
- This translates into delayed and not forgone growth
- Estimated cost does not account for the benefits of reduced climate change
- Unmitigated climate change would create increasing risks to economic growth

AR5 WGI SPM, AR5 WGII SPM

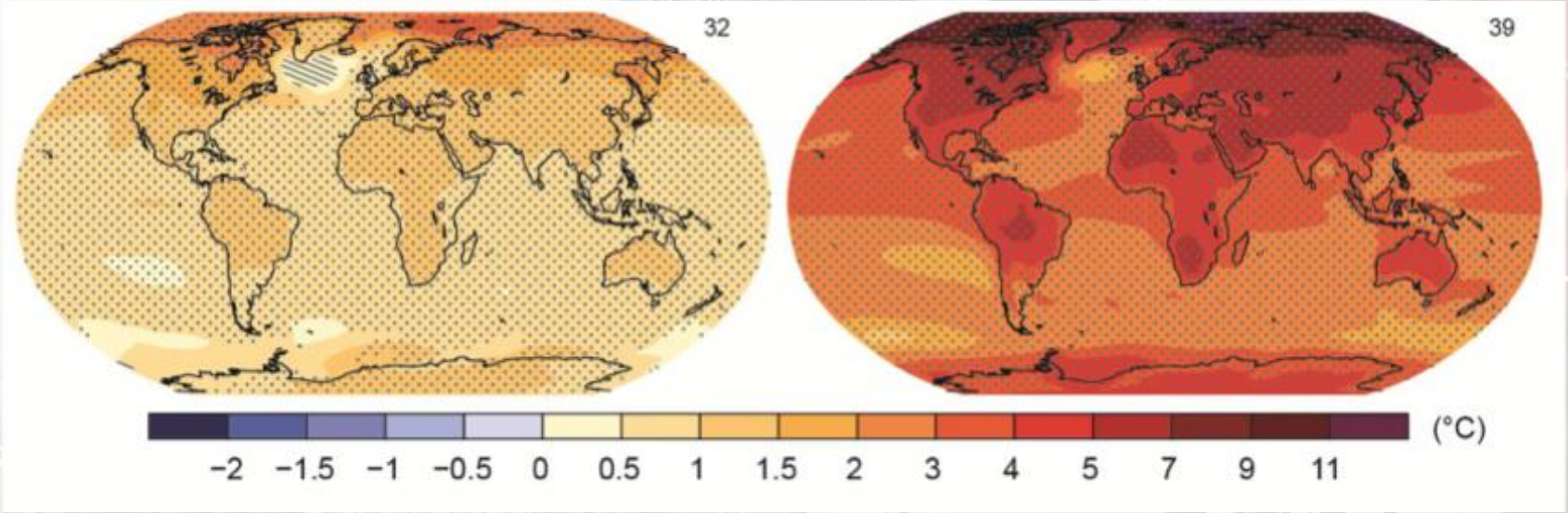


IPCC WG2 SPM.1

The Choices We Make Will Create Different Outcomes

With substantial mitigation

Without additional mitigation



Change in average surface temperature (1986–2005 to 2081–2100)

AR5 WGI SPM

SEACLID

CORDEX-Southeast Asia

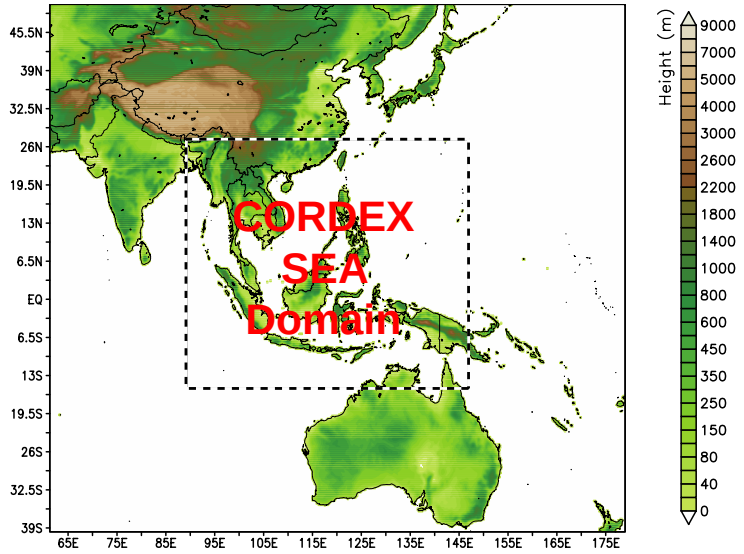
The Southeast Asia Regional Climate Downscaling (SEACLID) / CORDEX Southeast Asia Project

Fredolin Tangang

Coordinator

SEACLID/CORDEX SEA

On behalf of involved in SEACLID/CORDEX Southeast Asia



- 11 Countries, 15 Institutions involved in the project
- 14 GCMs will be downscaled

(http://www.ukm.edu.my/seaclid-cordex)

The Abdus Salam
International Centre
for Theoretical Physics
www.ictp.it

RegCM Training Workshop for Southeast Asia

May 25 - 29, 2015
Manila, The Philippines

The Abdus Salam International Centre for Theoretical Physics (ICTP), Italy, in collaboration with the host Manila Observatory and the Ateneo de Manila University, is organizing a "RegCM Training Workshop for Southeast Asia" to be held from May 25 - 29, 2015 in Manila, The Philippines.

OBJECTIVES

Southeast Asia is characterized by the presence of islands with very complex topographical features. These substantially affect local climates as well as the spatial distribution of quantities such as temperature, precipitation and extremes. For this reason, climate simulations over South East Asia require high spatial resolution, well beyond that achievable by today's Global Climate Models (GCMs). Regional Climate Models (RCMs) can fill this resolution gap, and thus represent important tools to simulate climate variability and change over the region. Despite this potential, to date the use of RCMs over the South East Asia region has been relatively limited, partly because of the necessity to build know-how and computing resources in the region. This workshop aims at improving this problem by providing both theoretical and practical training on the use of RCMs over South East Asia.

Theoretical lectures will cover the fundamentals of climate modeling and climate change, focusing in particular on the climate of the region and on the use of RCMs. The lectures will be complemented

ORGANIZERS/ LECTURERS

G. Narisma
(Ateneo de Manila Univ. /Manila Obs., Philippines)

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F. Giorgi
(ICTP, Italy)

E. Coppola
(ICTP, Italy)

INVITED LECTURERS

IPCC Fifth Assessment Report

Synthesis Report
(http://www.ipcc.ch)

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