A Glance on Mitigation in the report of IPCC-WGIII ar5

In the occasion of the Workshop on:

Status of Climate Science and Technology in Asia – for IPCC AR6

Kuala Lumpur, Malaysia,
15-16 November 2018
SEADPRI - Universiti Kebangsaan Malaysia

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Working Group III contribution to the IPCC Fifth Assessment Report

WMO UNEP

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Climate Change 2014

Mitigation of Climate Change

WGIII contribution to the IPCC ar5

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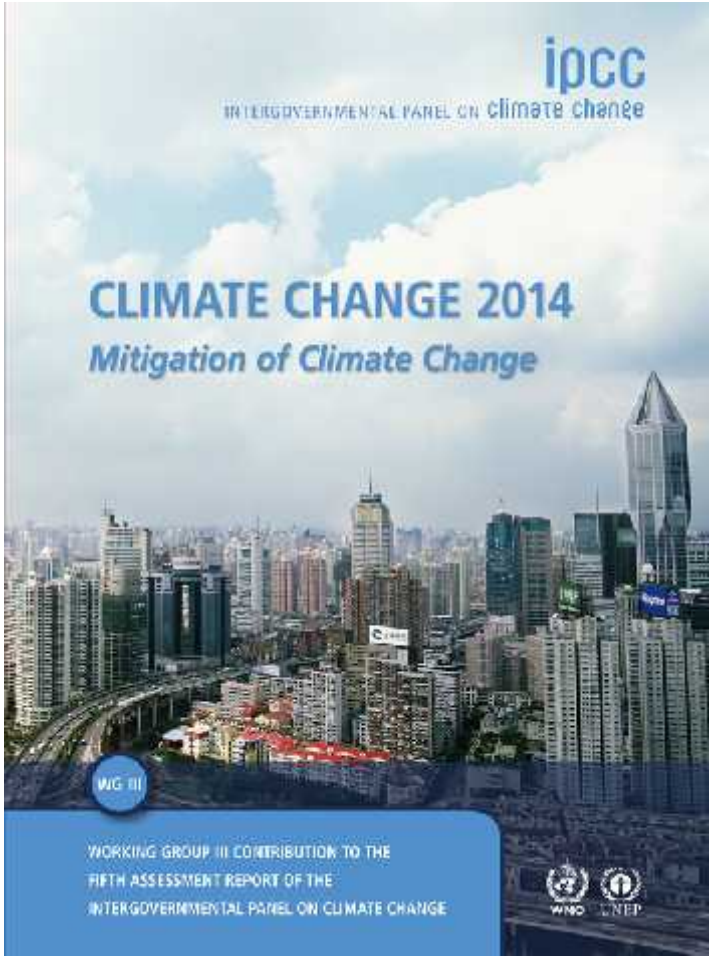
AR6, WGII, Chapter 10, Asia

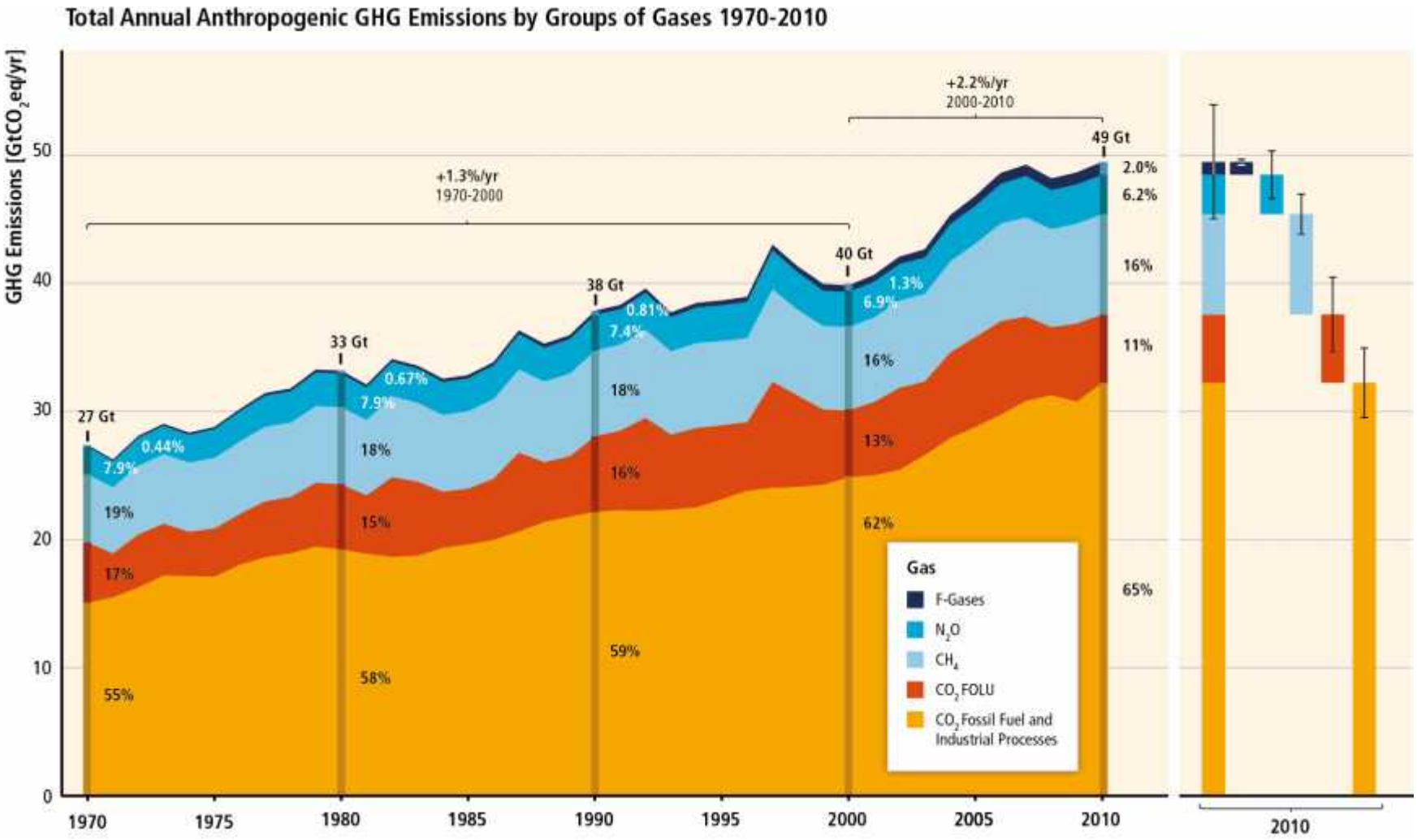
IPCC reports are the result of extensive work from scientists around the world.

1 Summary for Policymakers
1 Technical Summary

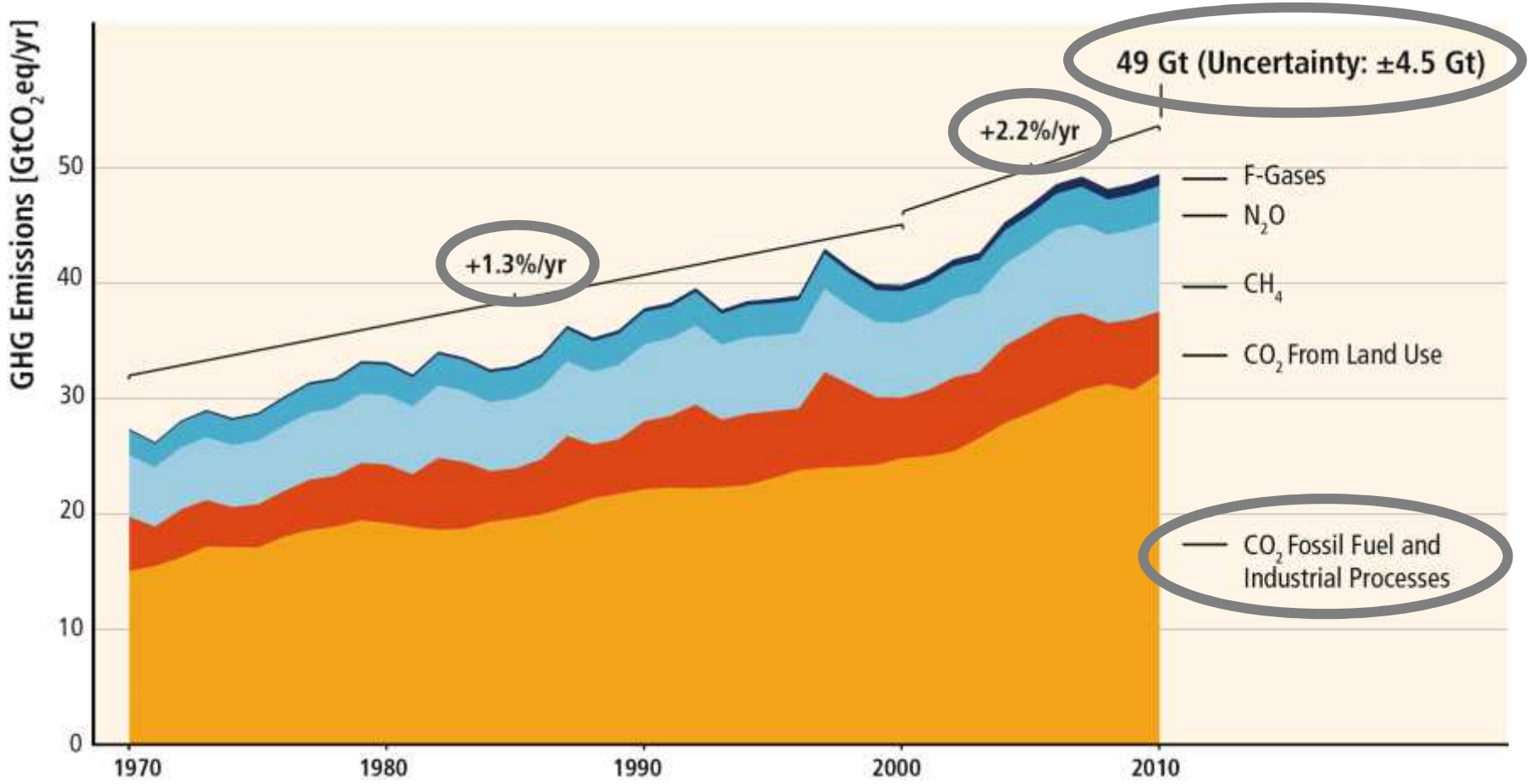
16 Chapters
235 Authors
900 Reviewers
More than **2000** pages
Close to **10,000** references
More than **38,000** comments



GHG emissions accelerate despite reduction efforts. Most emission growth is CO_2 from fossil fuel combustion and industrial processes.

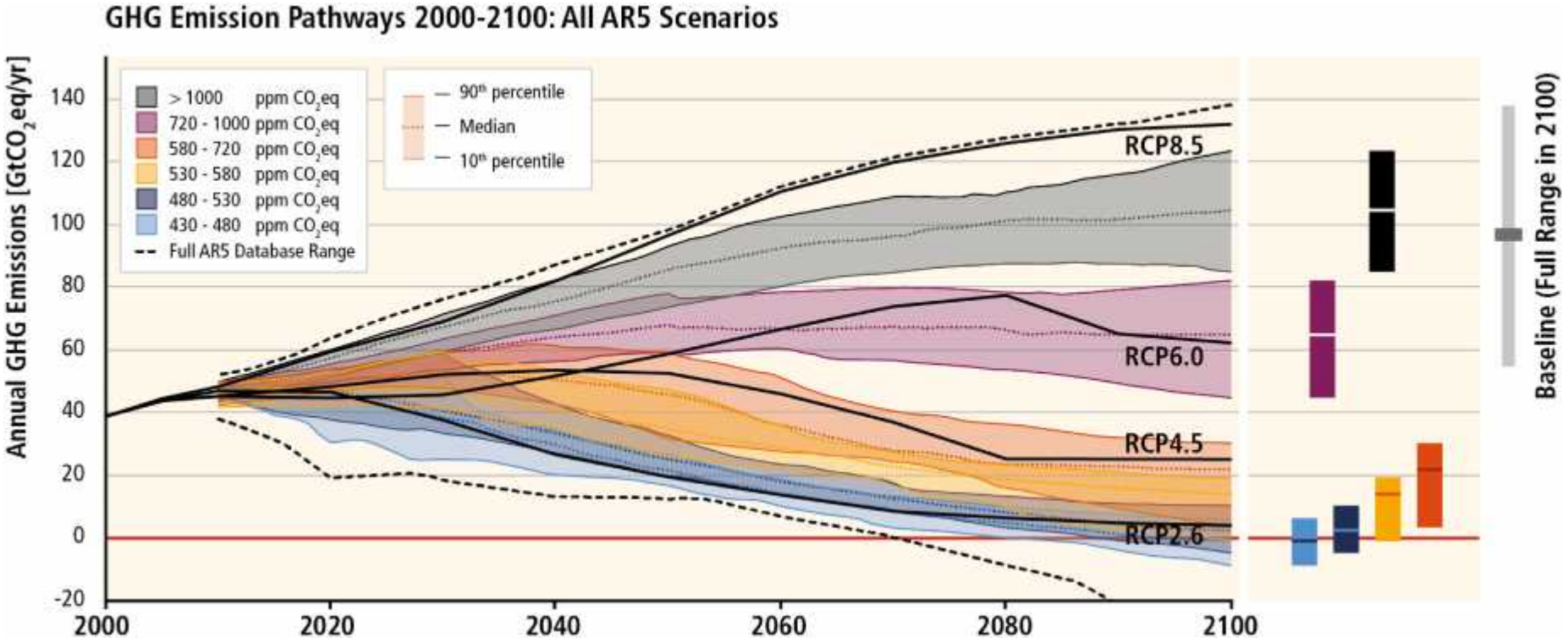


GHG emissions growth between 2000 and 2010 has been larger than in the previous three decades.



Based on Figure SPM.1

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

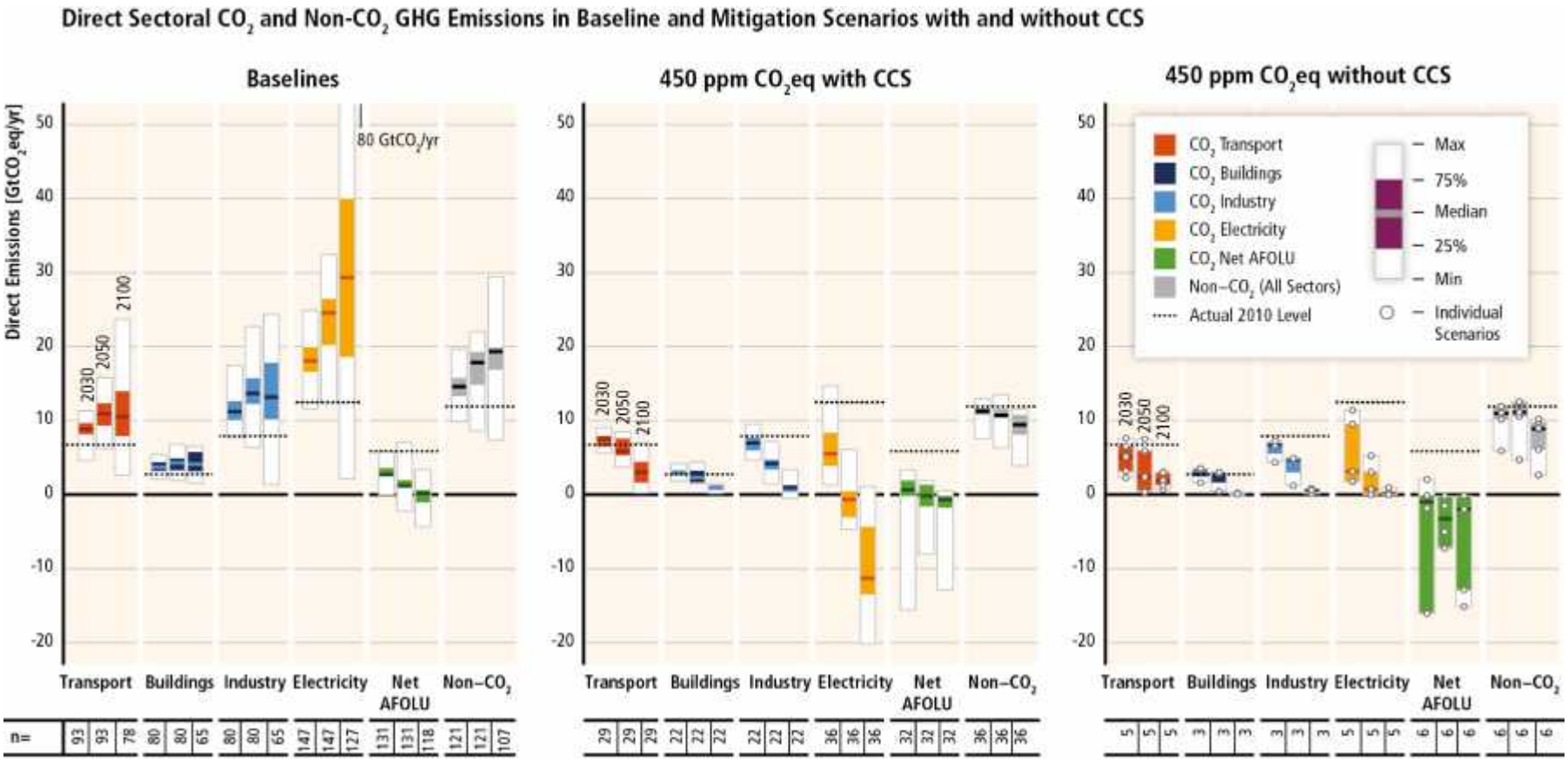


Estimates for mitigation costs vary widely.

- Reaching 450ppm CO_2eq entails consumption losses of 1.7% (1%-4%) by 2030, 3.4% (2% to 6%) by 2050 and 4.8% (3%-11%) by 2100 relative to baseline (which grows between 300% to 900% over the course of the century).
- This is equivalent to a reduction in consumption growth over the 21st century by about 0.06 (0.04-0.14) percentage points a year (relative to annualized consumption growth that is between 1.6% and 3% per year).
- Cost estimates exlude benefits of mitigation (reduced impacts from climate change). They also exclude other benefits (e.g. improvements for local air quality).
- Cost estimates are based on a series of assumptions.

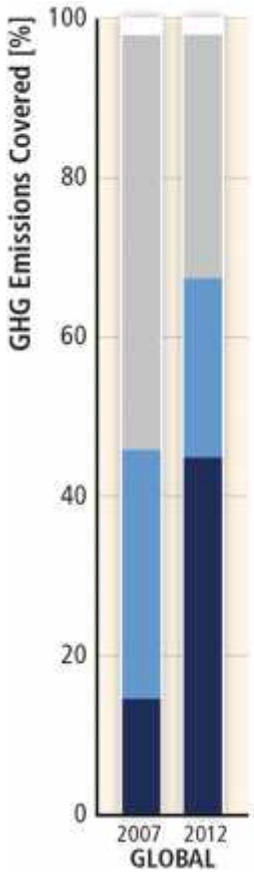
Mitigation requires changes throughout the economy. Efforts in one sector determine mitigation efforts in others.

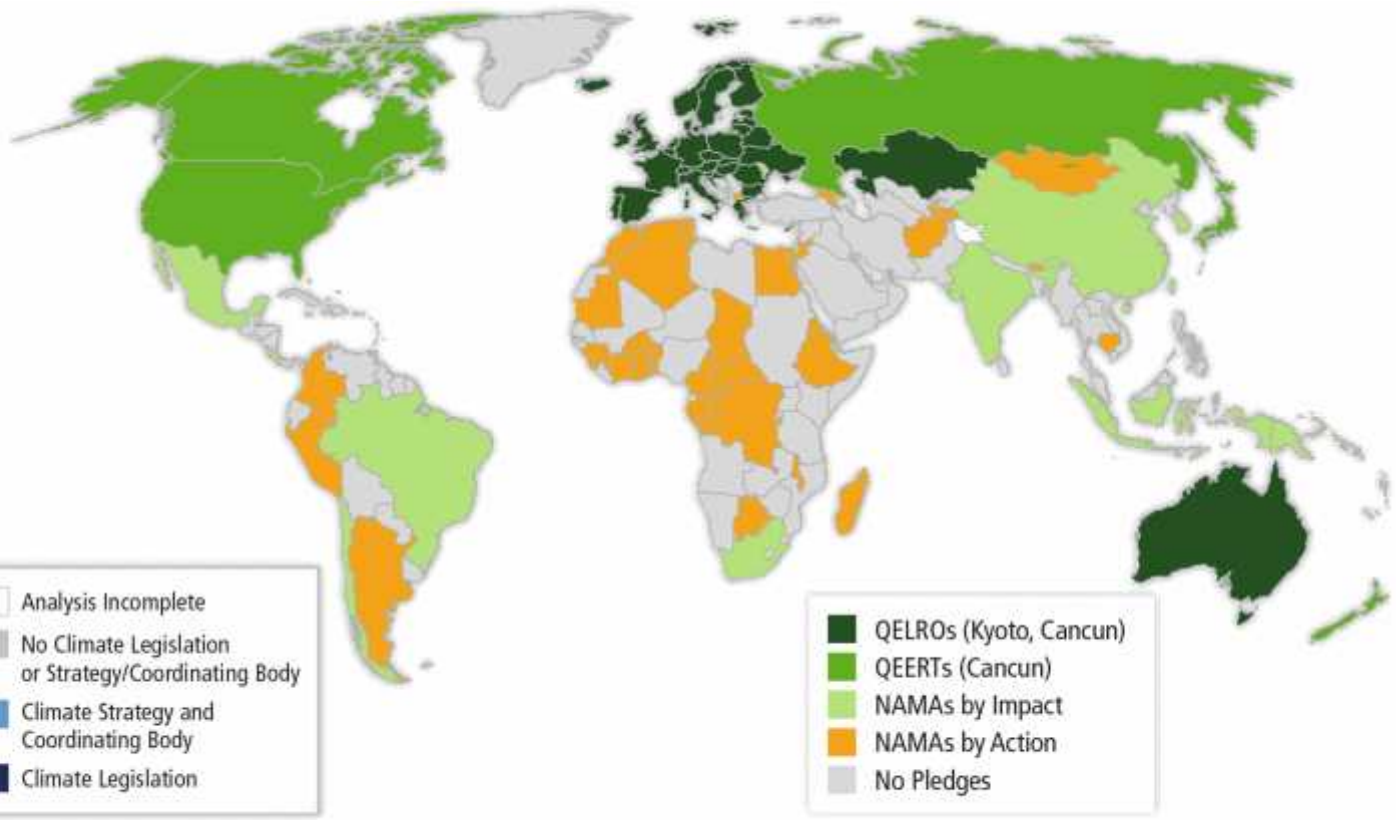
With or without CCS (Carbon Dioxide Capture and Storage)



There has been a considerable increase in national and sub-national mitigation policies since AR4.

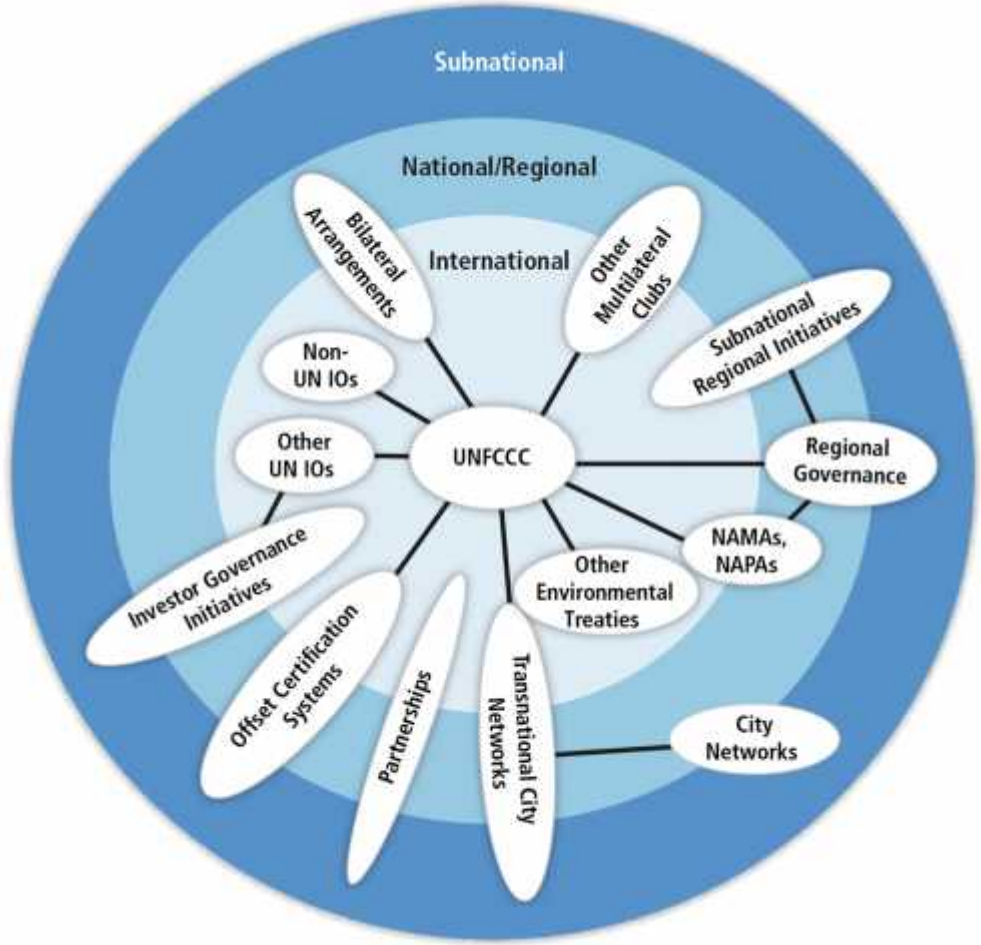
Quantified Emission Limitation and Reduction Objectives (QELROs); Quantified Economy-wide Emission Reduction Target (QEERT)
Nationally Appropriate Mitigation Action (NAMA)





Based on Figures 15.1 and 13.3

Climate change mitigation requires international cooperation across scales.



Based on Figure 13.1

IPCC reports are relevant

Sustainable Development and Mitigation

There is growing emphasis in the literature on the two-way relationship between **climate change mitigation** and **sustainable development**. The relationship may not always be mutually beneficial.

In most instances, mitigation can have ancillary benefits or co-benefits that contribute to other sustainable development goals (climate first).

Development that is sustainable in many other respects can create conditions in which mitigation can be effectively pursued (development first) (high agreement, much evidence).

Ref.: Climate Change 2007: Working Group III: Mitigation of Climate Change
AR4 WGIII Chapter 12 Sustainable Development and mitigation

International cooperation and Mitigation

International cooperation is necessary to significantly **mitigate climate change impacts** (robust evidence, high agreement).
This is principally due to the fact that greenhouse gases (GHGs) mix globally in the atmosphere, making anthropogenic climate change a global commons problem. International cooperation has the potential to address several challenges: multiple actors that are diverse in their perceptions of the costs and benefits of collective action, emissions sources that are unevenly distributed, heterogeneous climate impacts that are uncertain and distant in space and time, and mitigation costs that vary. [Section 13.2.1.1, 13.15]

Ref.: AR5 WGIII Chapter 13 International Cooperation: Agreements and Instruments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INTERGOVERNMENTAL PANEL ON climate change
Thank You
CLIMATE CHANGE 2014
Mitigation of Climate Change
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Working Group III contribution to the
IPCC Fifth Assessment Report
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