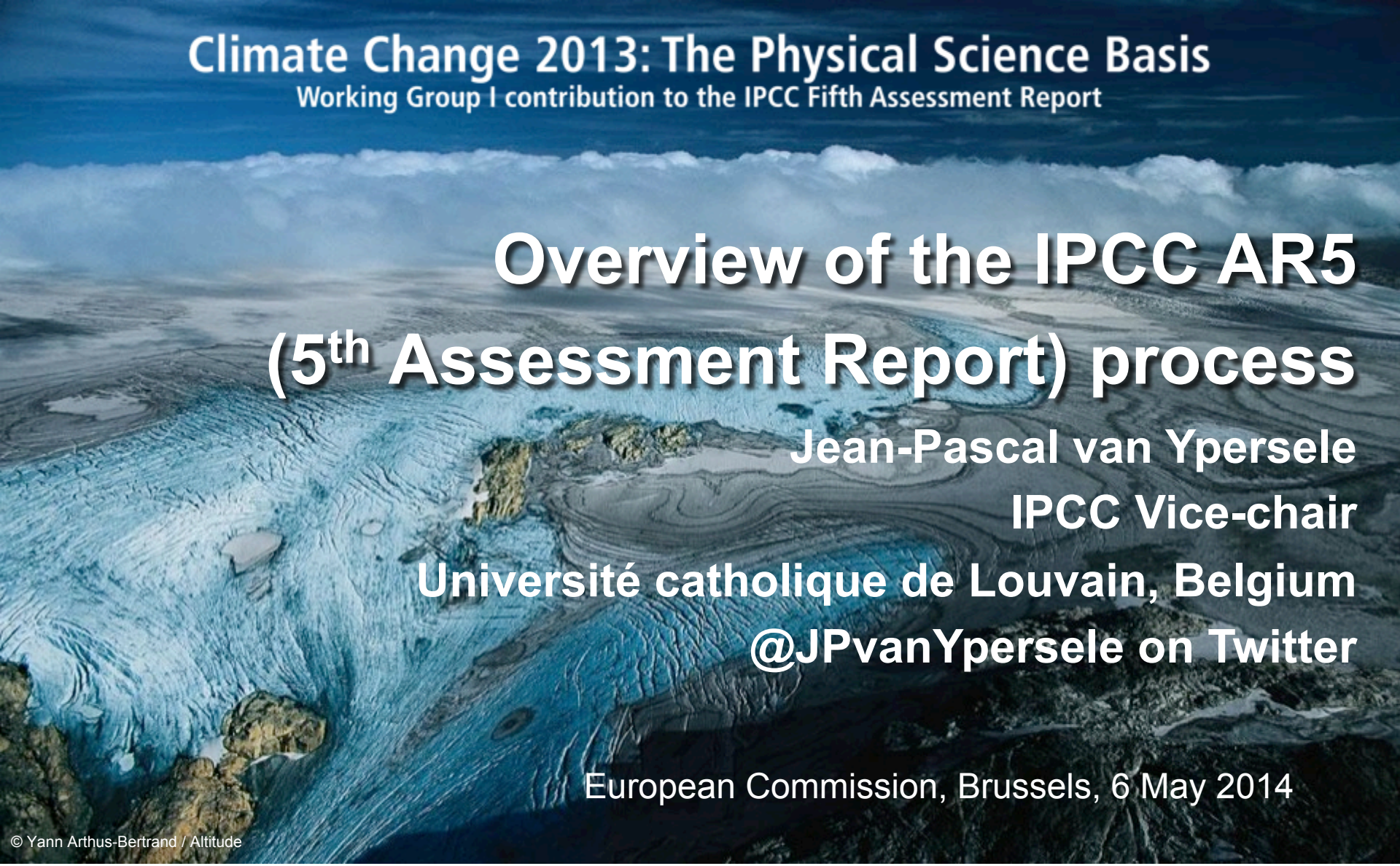


Overview of the IPCC AR5 (5th Assessment Report) process

Jean-Pascal van Ypersele
IPCC Vice-chair
Université catholique de Louvain, Belgium
@JPvanYpersele on Twitter

European Commission, Brussels, 6 May 2014

Thanks to the Belgian Federal Science Policy Office (BELSPO) for its support

None So Deaf

Auteur: @JohnKudelka

Why the IPCC ?

Established by WMO and UNEP in 1988

to provide **policy-makers** with an **objective source of information** about

- causes of climate change,
- potential environmental and socio-economic impacts,
- possible response options (adaptation & mitigation).

WMO=World Meteorological Organizatior

UNEP= United Nations Environment Programme

IPCC writing cycle (5 years, 2500 scientists)

- **Plenary decides table of content of reports**
- **Bureau appoints world-class scientists as authors, based on publication record**
- **Authors assess all scientific literature**
- ***Draft* – Expert review (+ Review editors)**
- ***Draft 2 (+ Draft 1 Summary for Policy Makers (SPM)* – Combined expert/government review**
- ***Draft 3 (+ Draft 2 SPM)*– Government review of SPM**
- **Approval Plenary (interaction authors – governments) – *SPM and full report***
- ***NB: the authors have the last word for words that are in the SPM***

Jean-Pascal van Ypersele
(vanyp@climate.be)

Completed IPCC Reports

5 Assessment Reports *(1990, 1995, 2001, 2007, 2013-14)*

1992 Supplementary Report and *1994* Special Report

8 Special Reports *(1997,1999, 2000, 2005, 2011)*

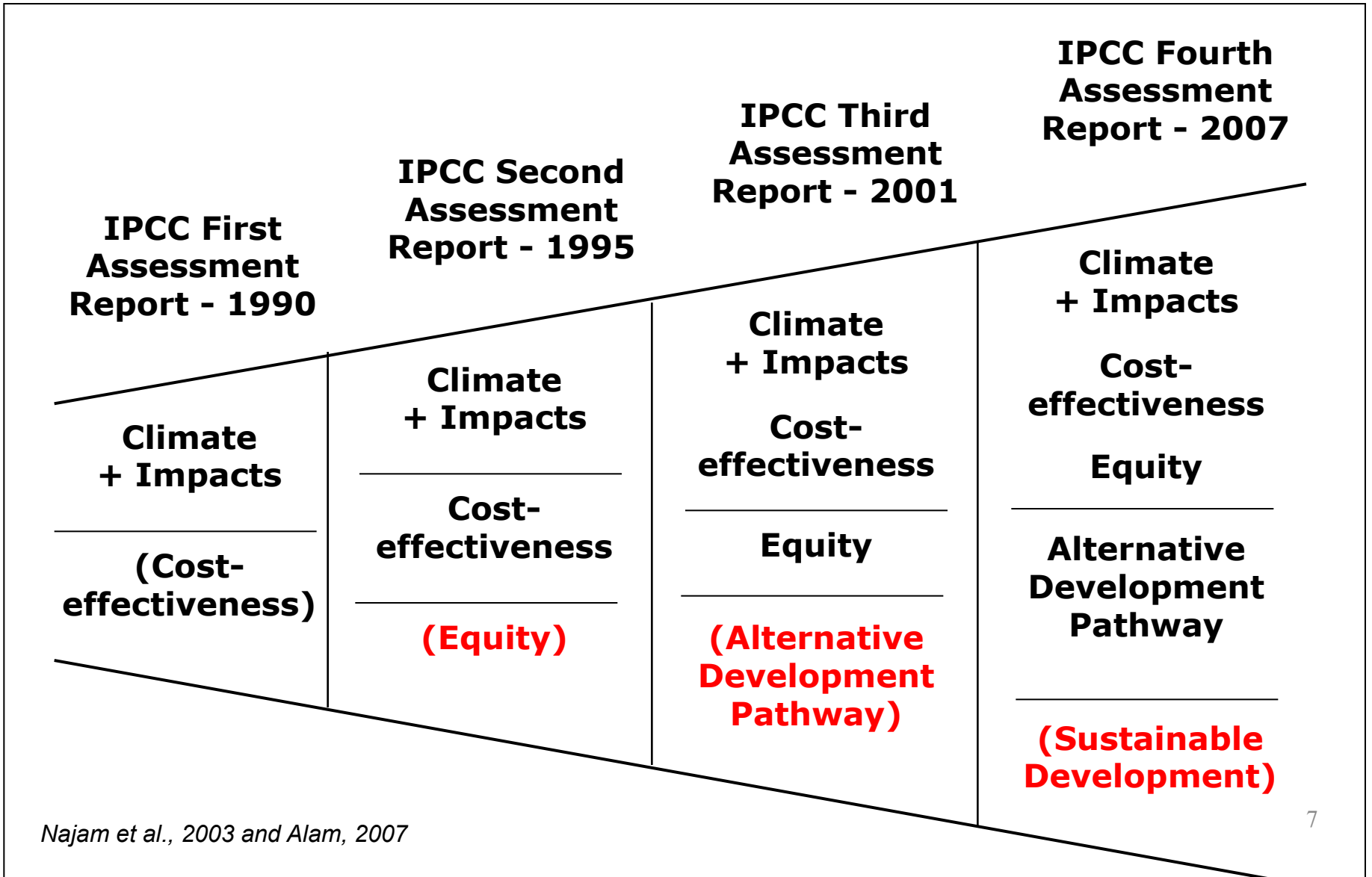
Guidelines for National GHG Inventories, Good Practice Guidance *(1995-2006)*

6 Technical Papers *(1996-2008)*

Recent/Coming IPCC Products

- ***2011: Special report on Renewable Energy Sources and Climate Change Mitigation***
- ***2011: Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation***
- ***2013: AR5 WGI report (physical science)***
- ***2014: AR5 WGII (Impacts & Adaptation); WGIII (Mitigation), Synthesis Report (October)***
- ***All available on www.ipcc.ch***

Background



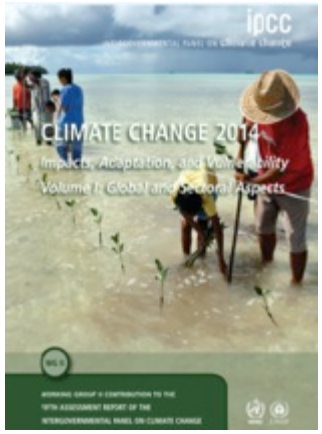
Najam et al., 2003 and Alam, 2007

AR5 is the best ever

- Better integration of Mitigation and Adaptation
- Improved risk-management approach
- Evolving away from the non-mitigation SRES scenarios (SRES= Special Report on Emission Scenarios, 2000)
- Special effort to provide regional information when available
- Sustainable development & equity aspects
- More comprehensive treatment of economic aspects, and of cross-cutting issues
- Emerging issues handled (geo-engineering, …)
- Better handling & communication of uncertainties

The IPCC assessments have influenced global action on an unprecedented scale

1. The First Assessment Report (FAR, 1990) had a major impact in defining the content of the UNFCCC
2. The Second Assessment Report (SAR, 1996) was largely influential in defining the provisions of the Kyoto Protocol
3. The Third Assessment Report (TAR, 2001) focused attention on the impacts of climate change and the need for adaptation
4. The Fourth Assessment Report (AR4, 2007) informed the decision on the ultimate objective (2°C) and provided a strong basis for a post Kyoto Protocol agreement
5. The Fifth Assessment Report (AR5, 2013-14) will inform the review of the 2°C objective, and be the context for preparing the post-Durban 2015 agreement



What is happening in the climate system?

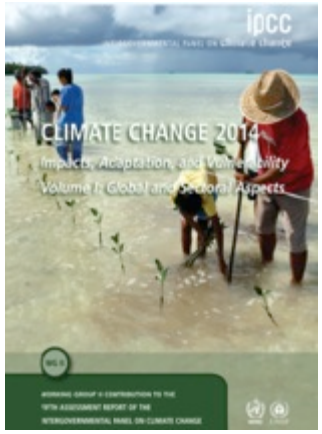
What are the risks?

What can be done?

ipcc
INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

WG I (Physical science basis): 209 lead authors, 2014 pages, 54.677 review comments



WG II (Impacts, Adaptation, and Vulnerability): 243 lead authors, 2500 pages, 50.492 review comments

WG III (Mitigation of Climate Change): 235 coordinating and lead authors, 2000 pages, 38.315 review comments

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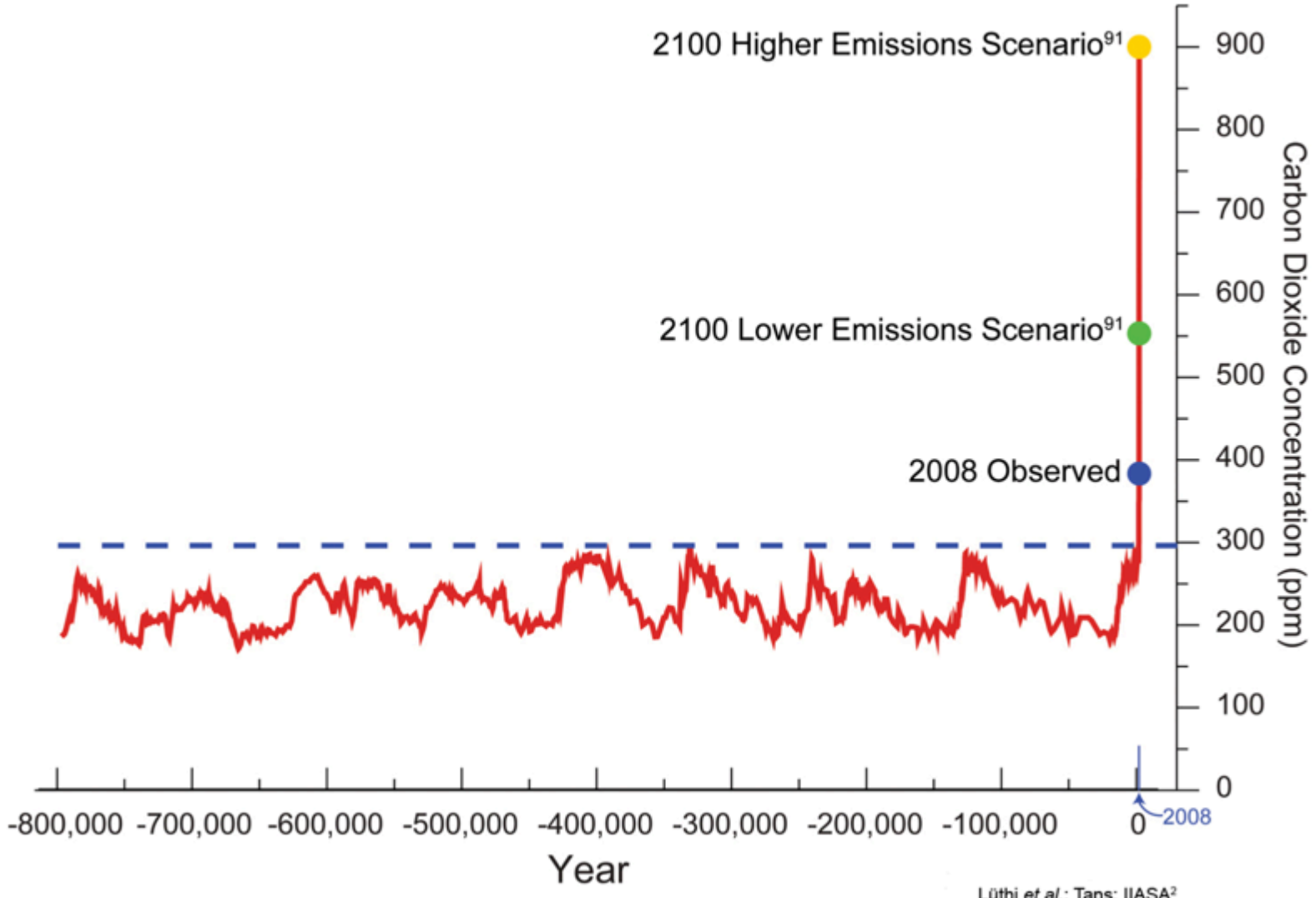
What is happening in the climate system?

Atmospheric CO_2 over the last 800000 years



U.S. Global Change Research Program:Lüthi *et al.*; Tans; IIASA2

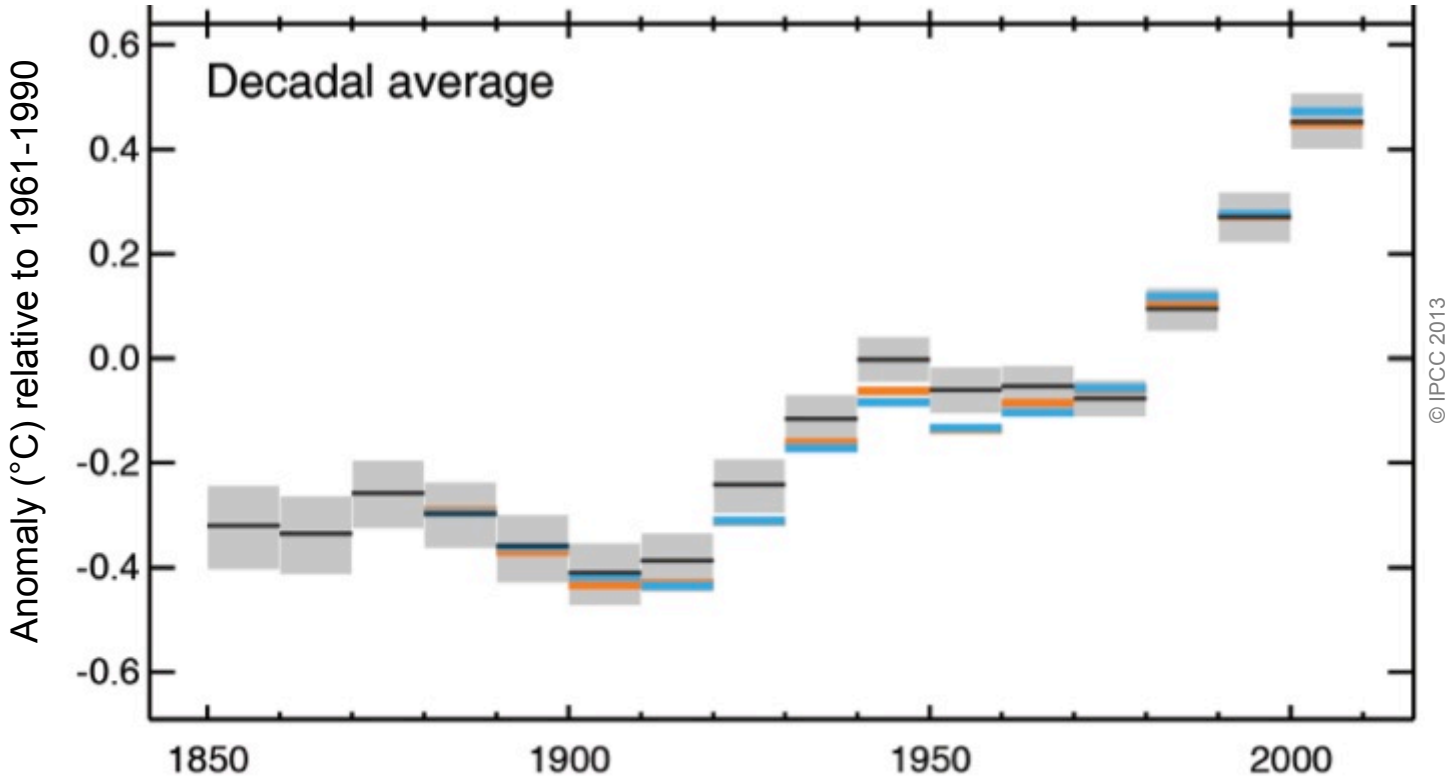


Fig. SPM.1a

Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850.

In the Northern Hemisphere, 1983–2012 was *likely* the warmest 30-year period of the last 1400 years (*medium confidence*).

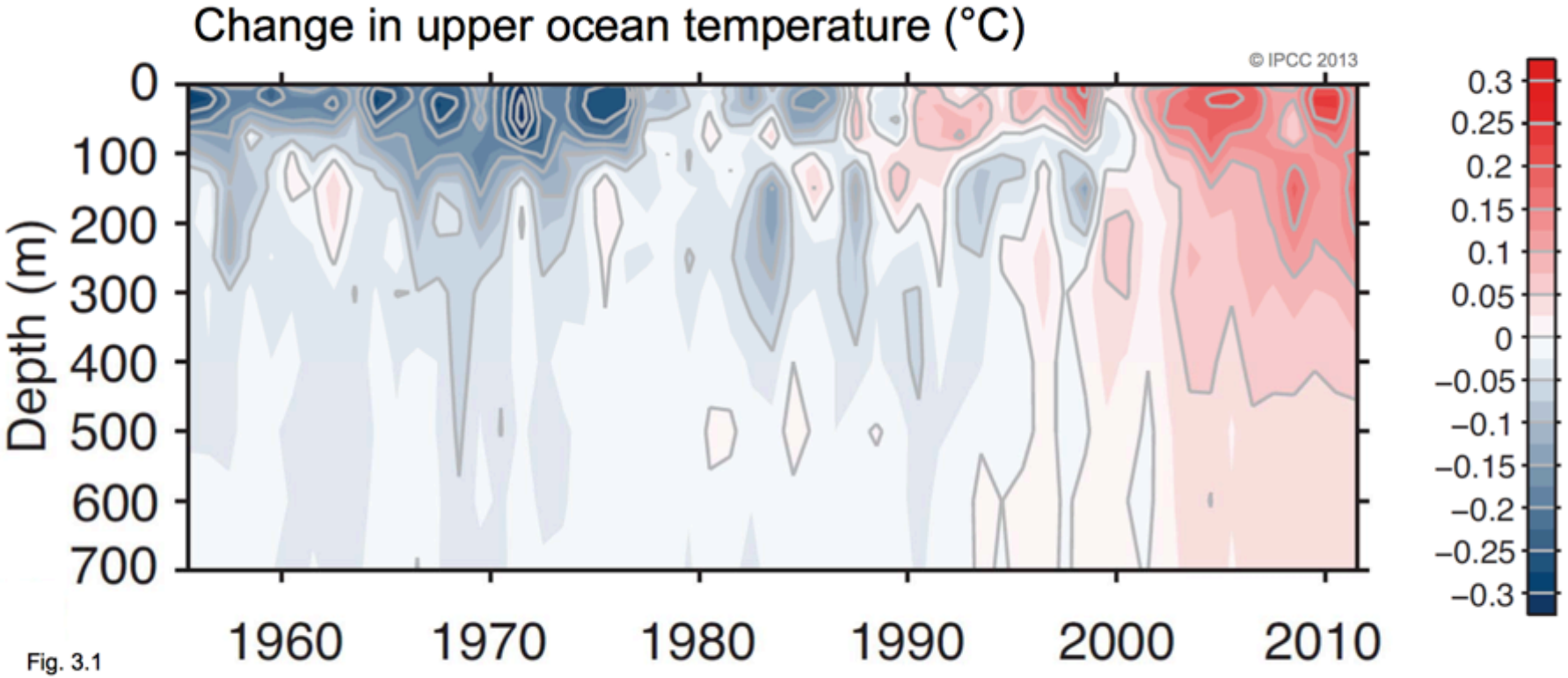


Fig. 3.1

It is *virtually certain* that the upper ocean (0-700 m) warmed from 1971 to 2010, [...]. It is *likely* that the ocean warmed between 700 and 2000 m from 1957 to 2009.

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Plateau Glacier (1961)
(Alaska)

http://www.weather.com/news/science/environment/alaskas-glaciers-capturing-earth-changing-our-eyes-20131125?cm_ven=Email&cm_cat=ENVIRONMENT_us_share

Plateau Glacier (2003)
(Alaska)

http://www.weather.com/news/science/environment/alaskas-glaciers-capturing-earth-changing-our-eyes-20131125?cm_ven=Email&cm_cat=ENVIRONMENT_us_share

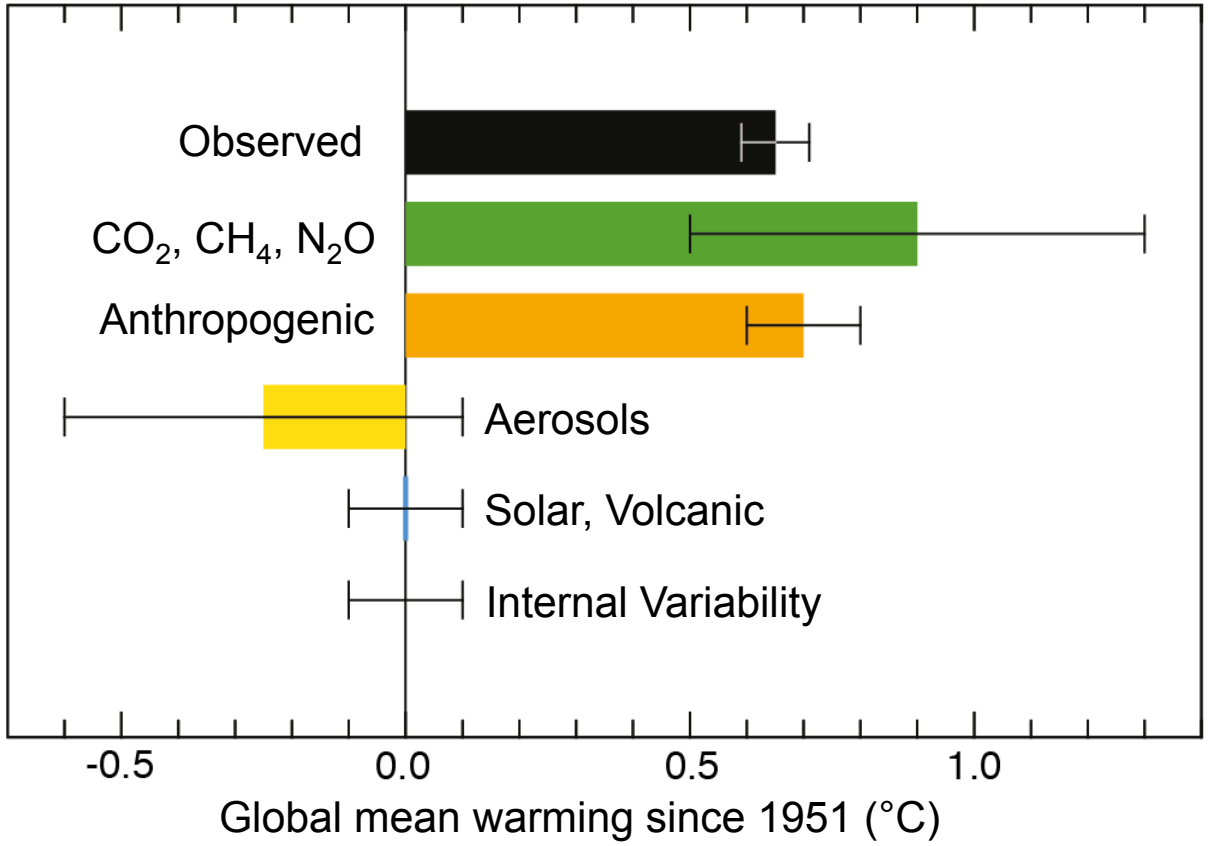


Fig. TS.10

Human influence on the climate system is clear.

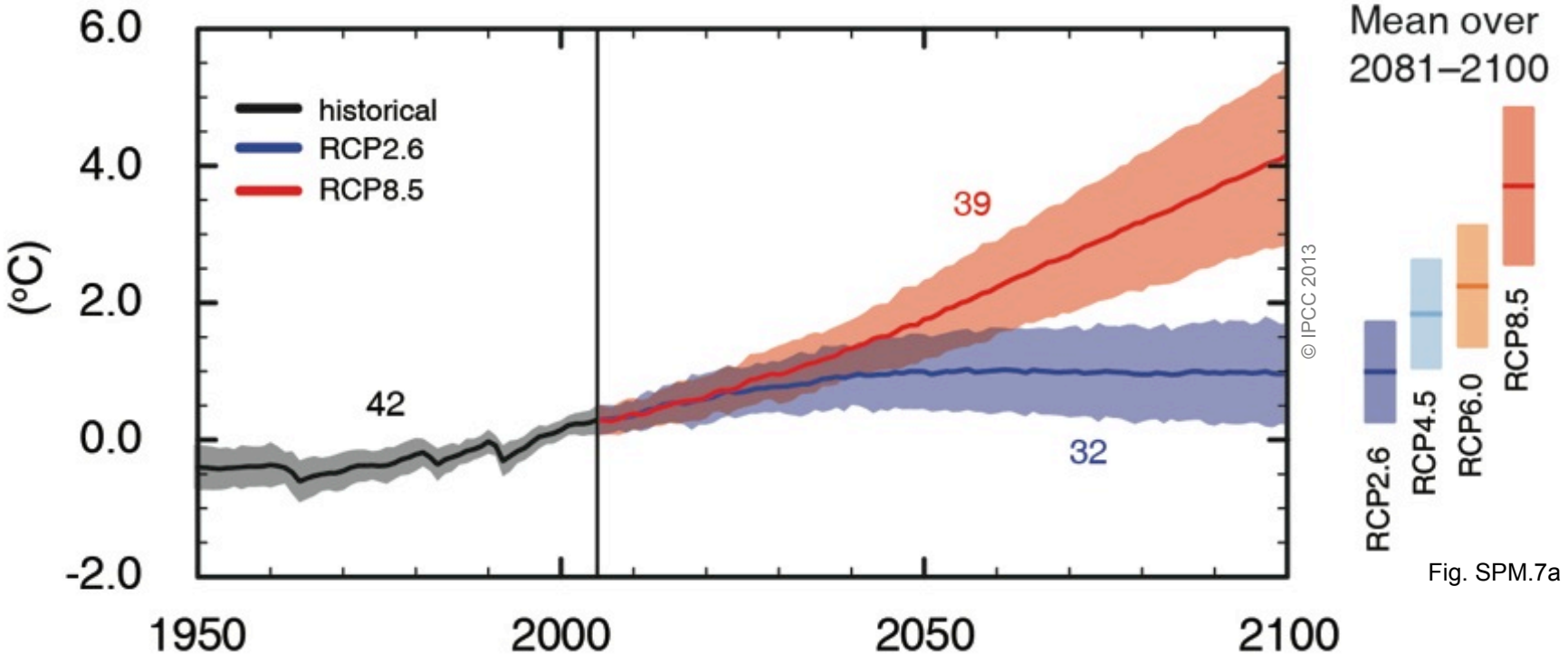


Fig. SPM.7a

Global surface temperature change for the end of the 21st century is *likely* to exceed 1.5°C relative to 1850–1900 for all scenarios except RCP2.6.

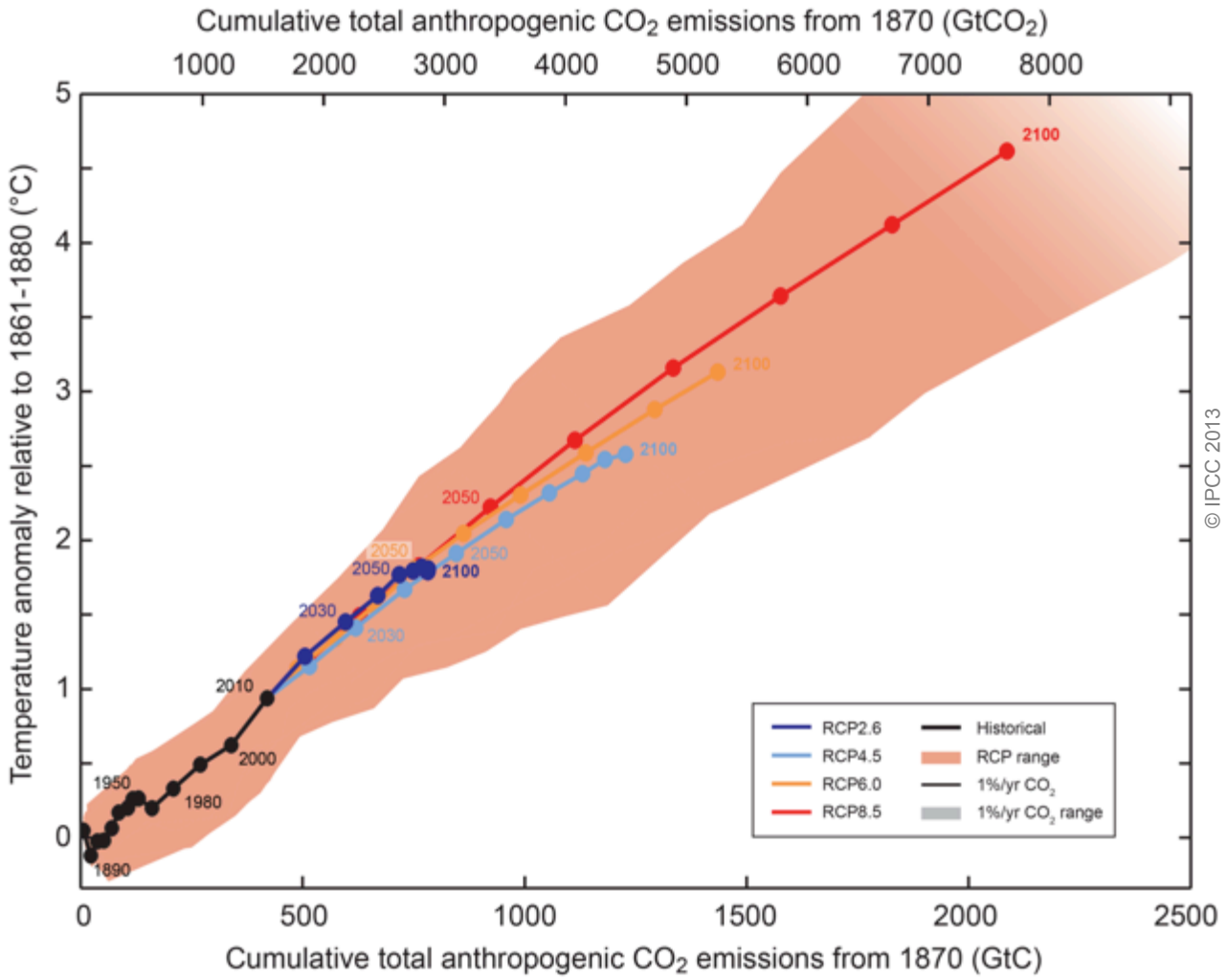
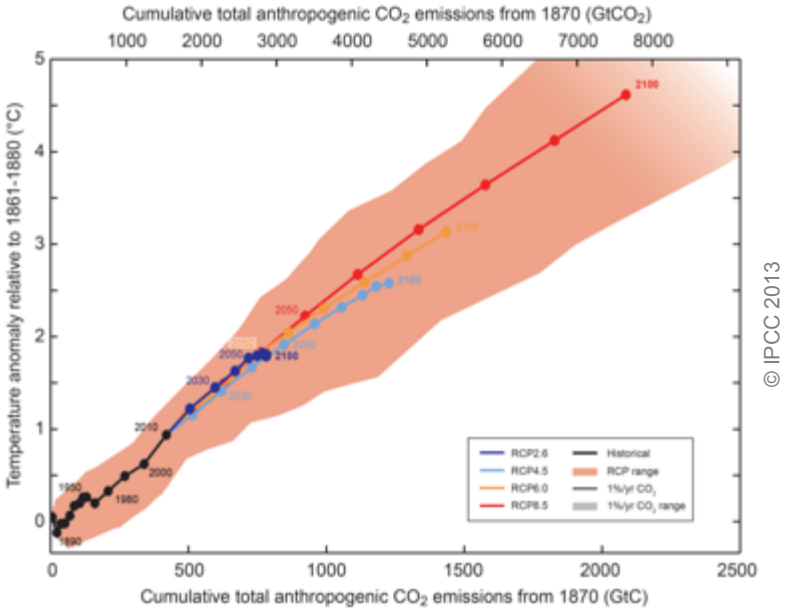


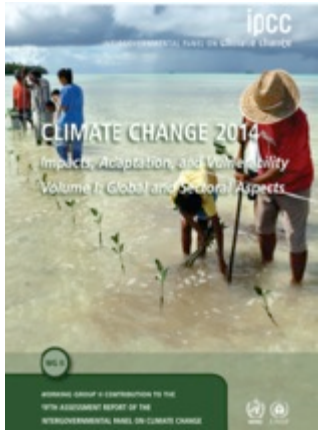
Fig. SPM.10

Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.

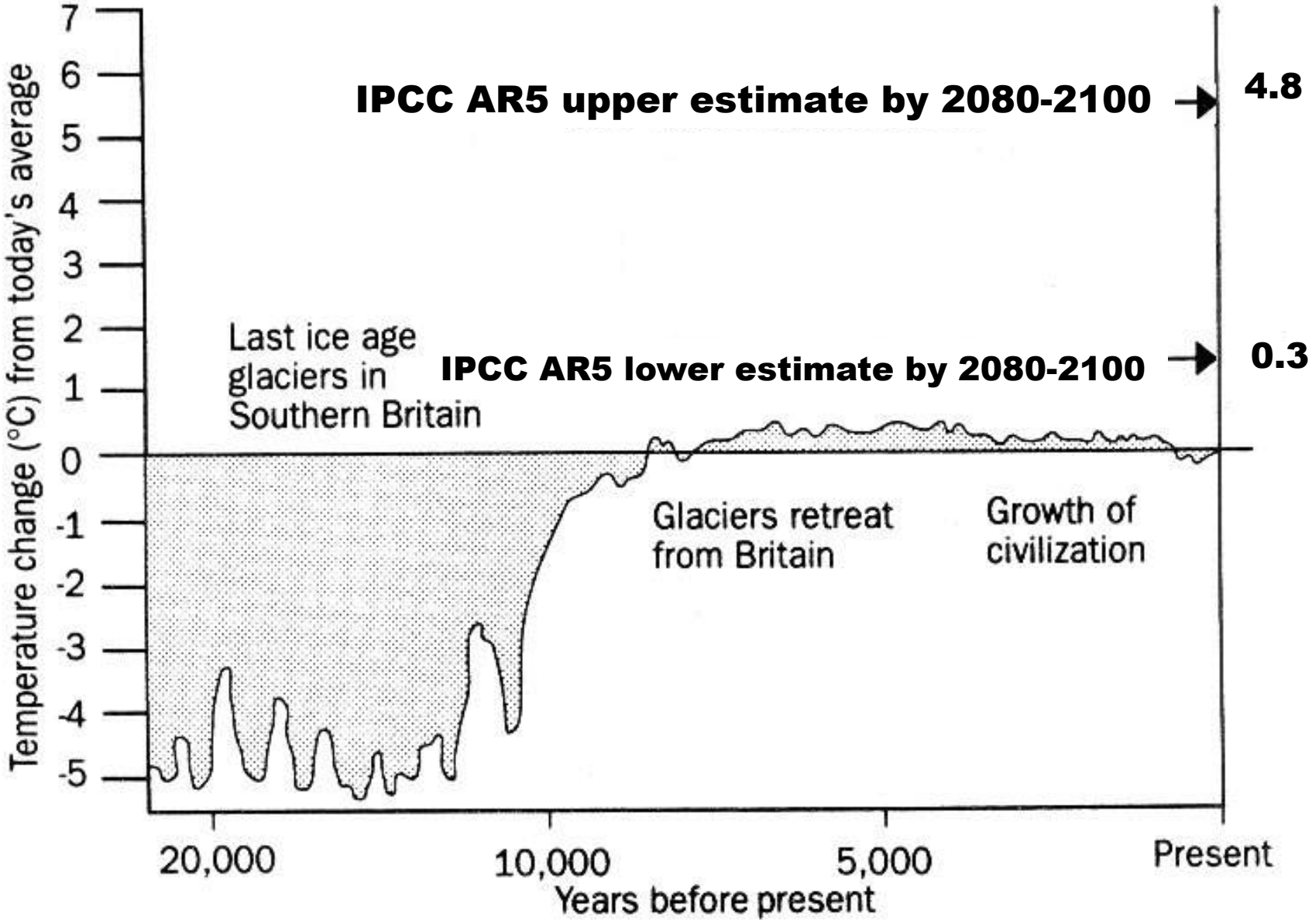


Limiting warming to *likely* less than 2°C since 1861-1880 requires cumulative CO_2 emissions to stay below 1000 GtC. Until 2011, over 50% of this amount has been emitted.

Accounting for other forcings, the upper amount of cumulative CO_2 emissions is 800 GtC; over 60% have been emitted by 2011.



What are the risks?



Adapted from: International Geosphere Biosphere Programme Report no.6, Global Changes of the Past, July1988

What can be done?

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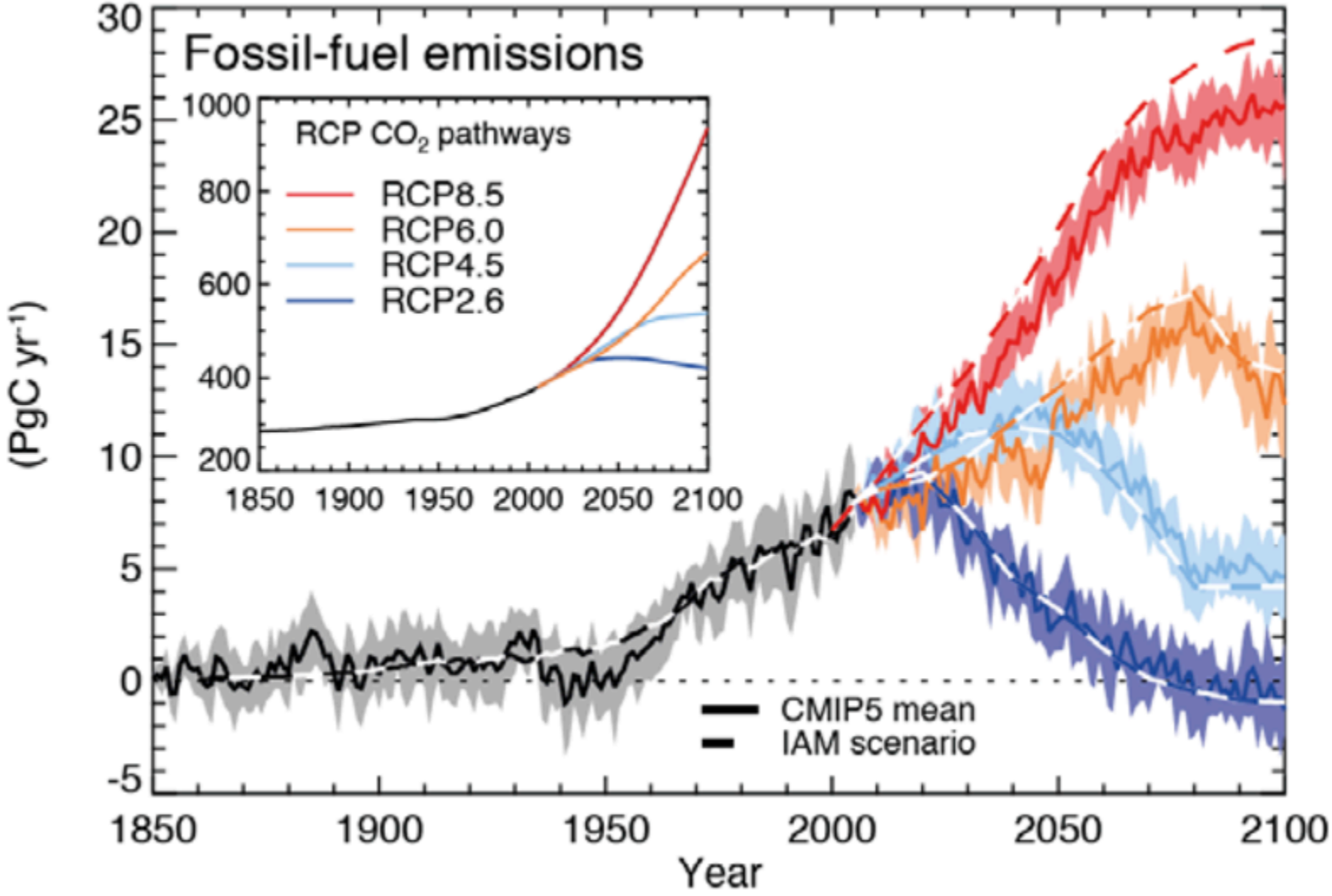
INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

Compatible fossil fuel emissions simulated by the CMIP5 models for the four RCP scenarios



AR5 WGI TS

Conclusion (1):

Science has a lot to offer to understand better this un-named "Party" of UNFCCC, with whom one can*not* negotiate:

The Climate System, governed by the laws of Nature

Conclusion (2):

IPCC is eager to continue serving the climate and sustainable development process, with policy relevance, without being policy-prescriptive

Useful links:

- www.ipcc.ch :IPCC
- www.climatechange2013.org :WGI
- www.ipcc-wg2.gov/AR5 :WGII
- www.mitigation2014.org :WGIII
- **On Twitter: @JPvanYpersele**