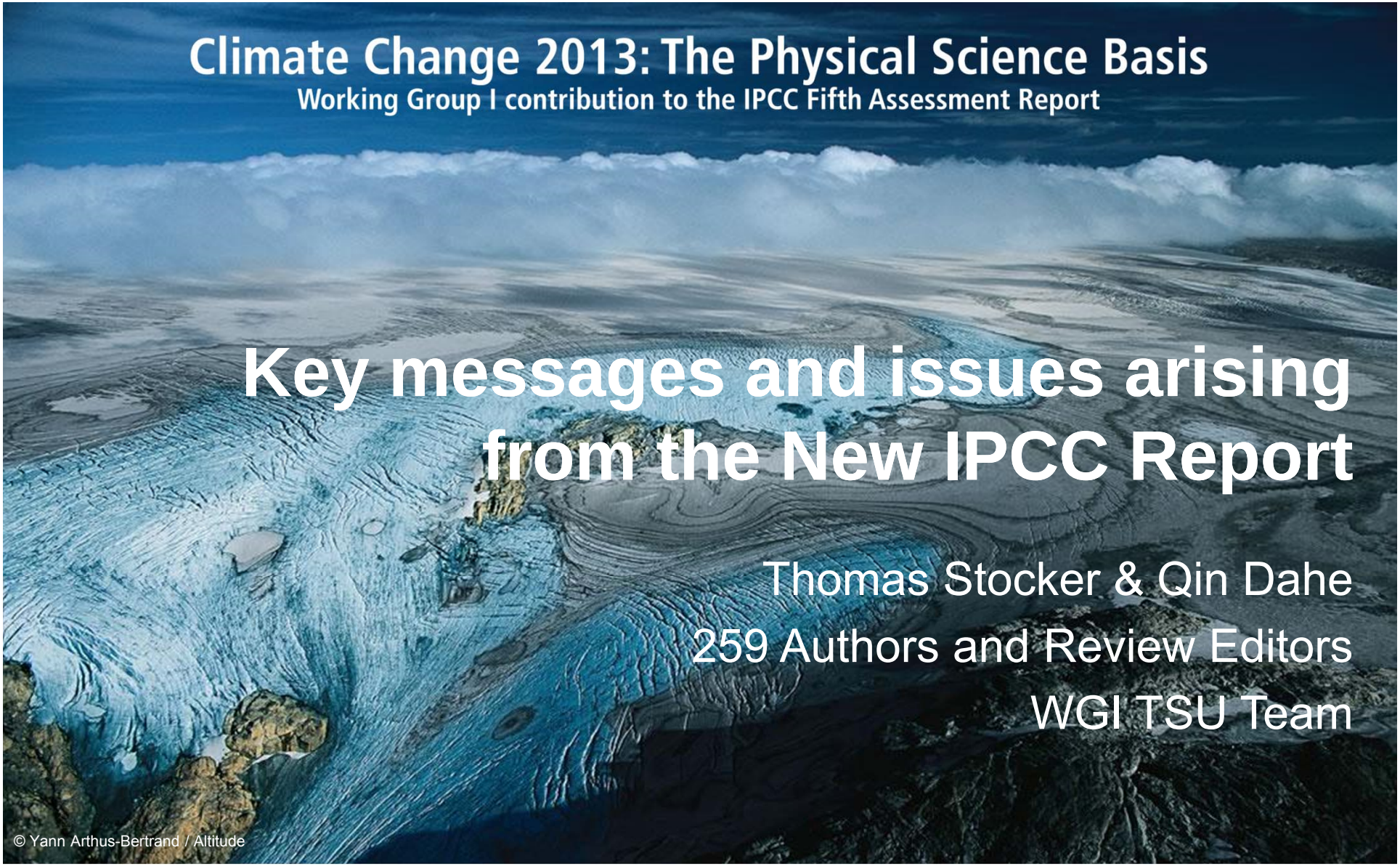


Key messages and issues arising from the New IPCC Report

Thomas Stocker & Qin Dahe

259 Authors and Review Editors

WGI TSU Team

Key SPM Messages

19 Headlines

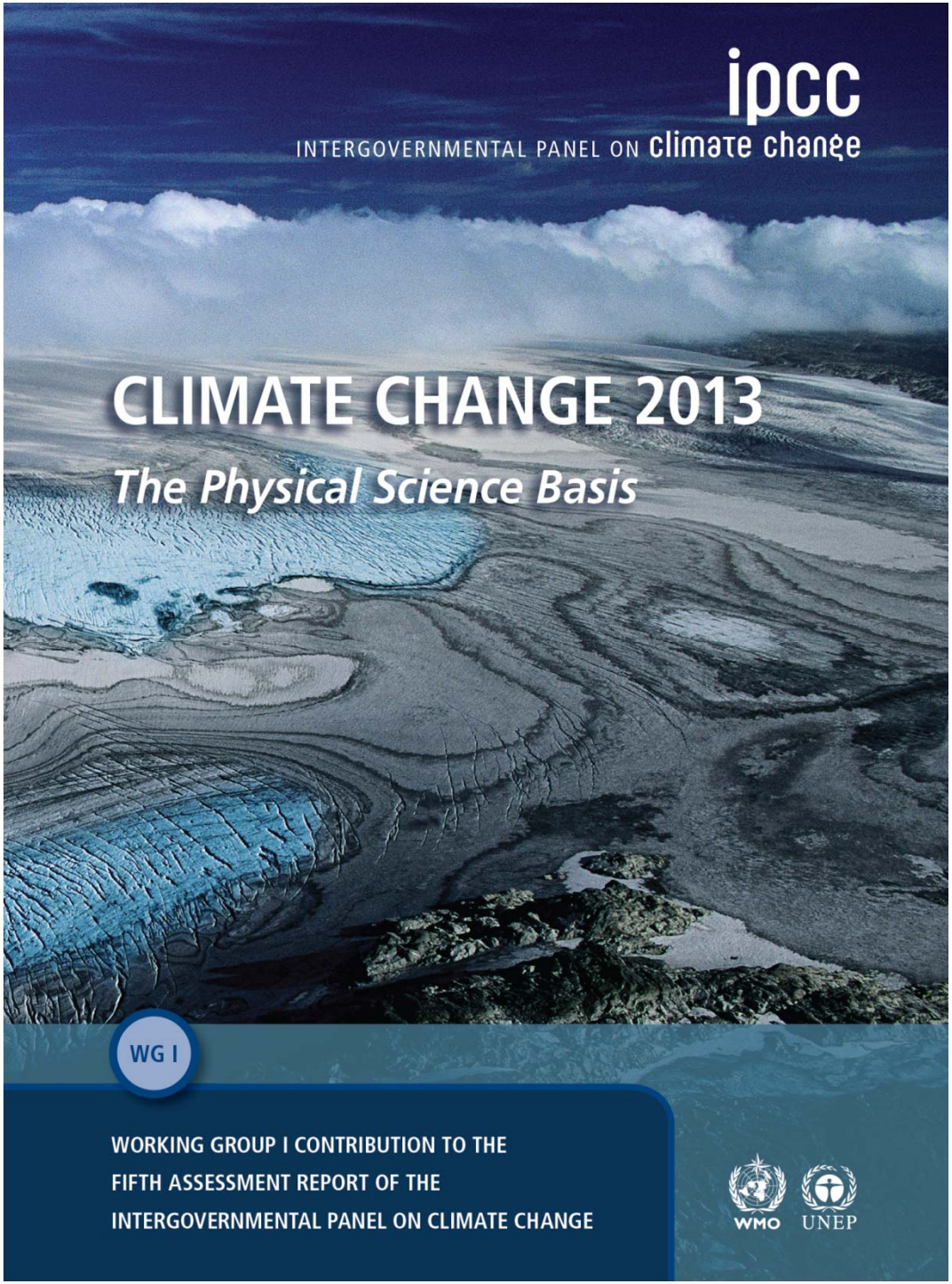
on less than 2 Pages

Summary for Policymakers

14,000 Words

14 Chapters & Atlas

1,100,000 Words



Key SPM Messages

19 Headlines

on less than 2 Pages

Summary for Policymakers

14,000 Words

14 Chapters & Atlas

1,100,000 Words

worked hard for more than 3.5 years

assessed over 9,200 publications

analyzed more than 2 million Gigabytes

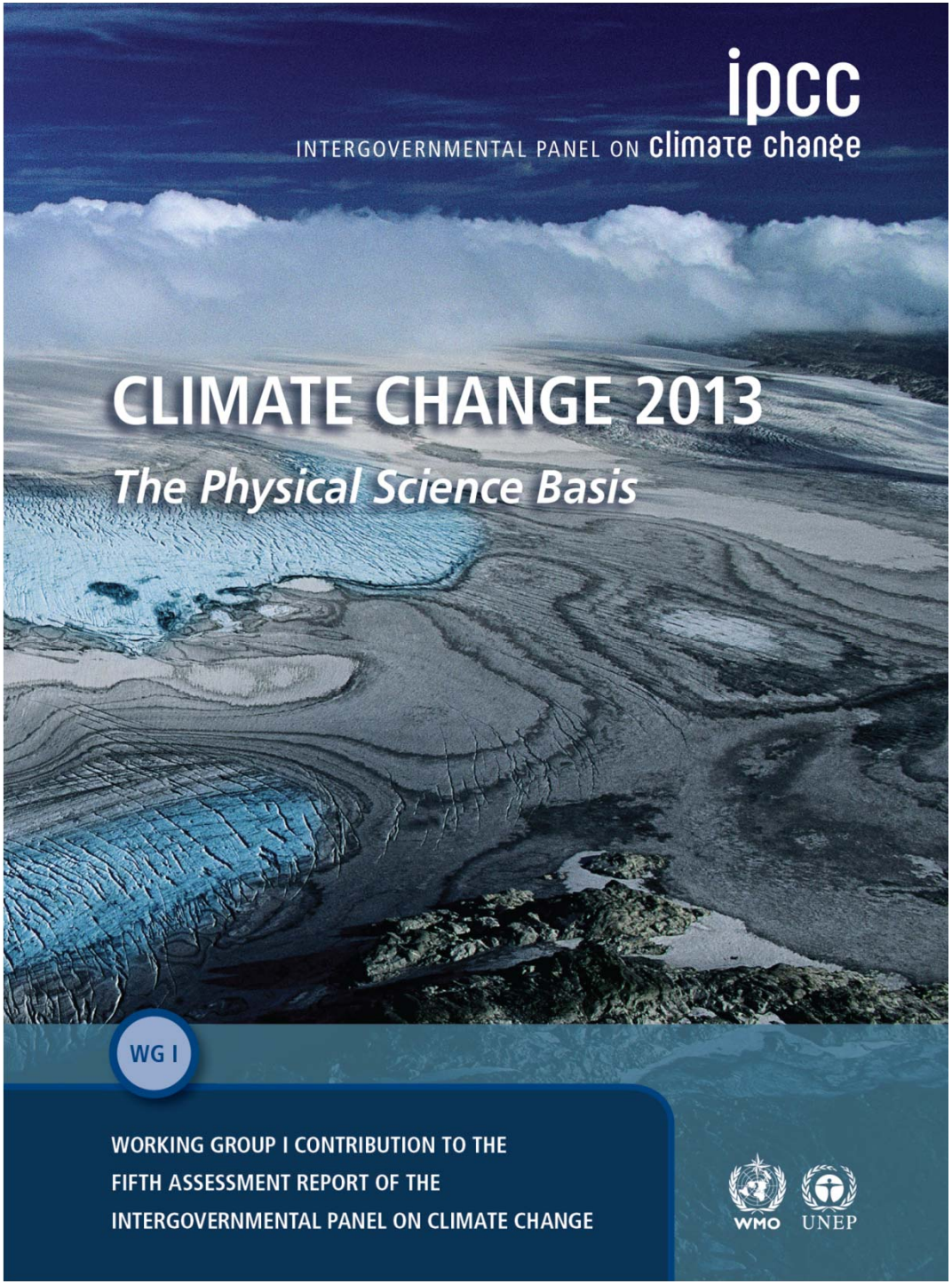
produced more than 1,200 diagrams

responded to 54,677 review comments

Observations

Understanding

Future



Observation

What has changed?

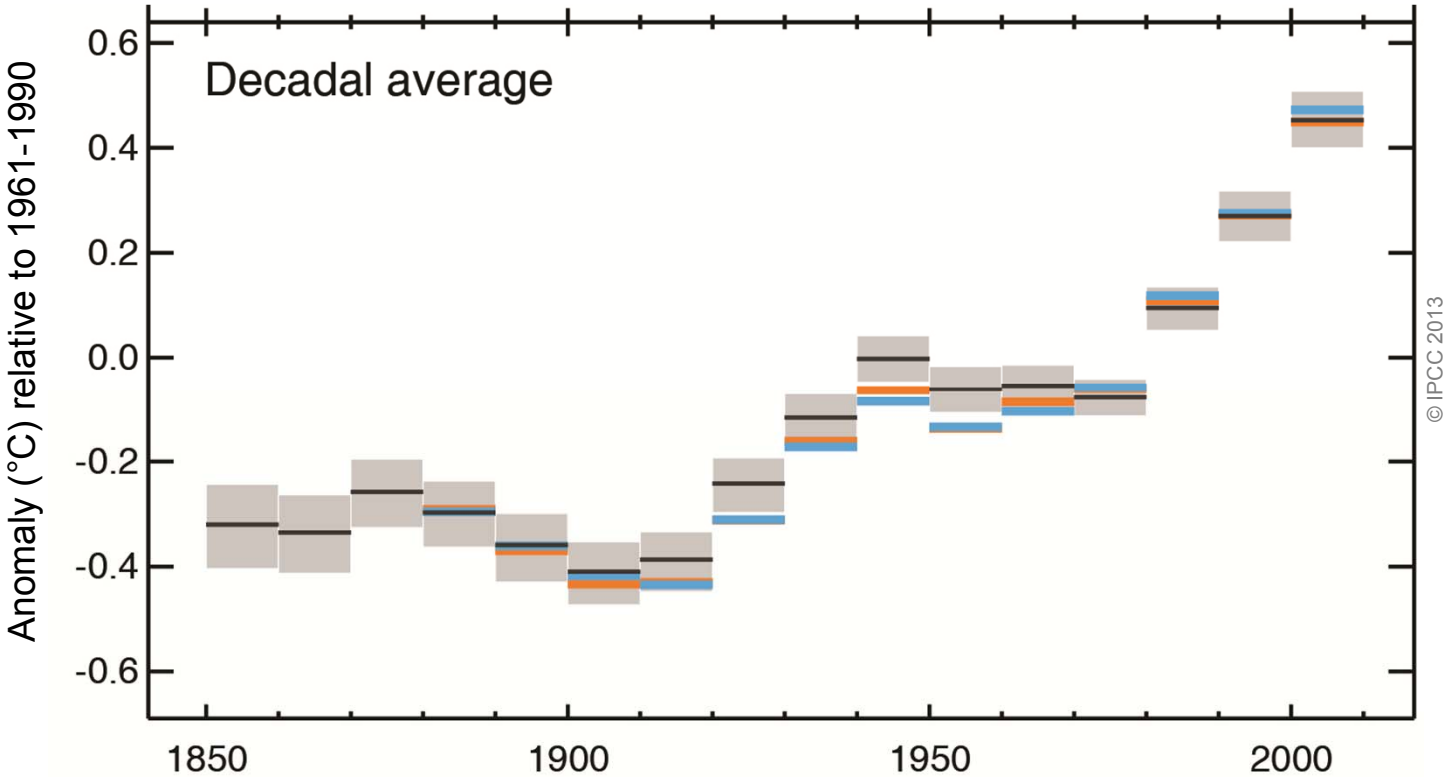
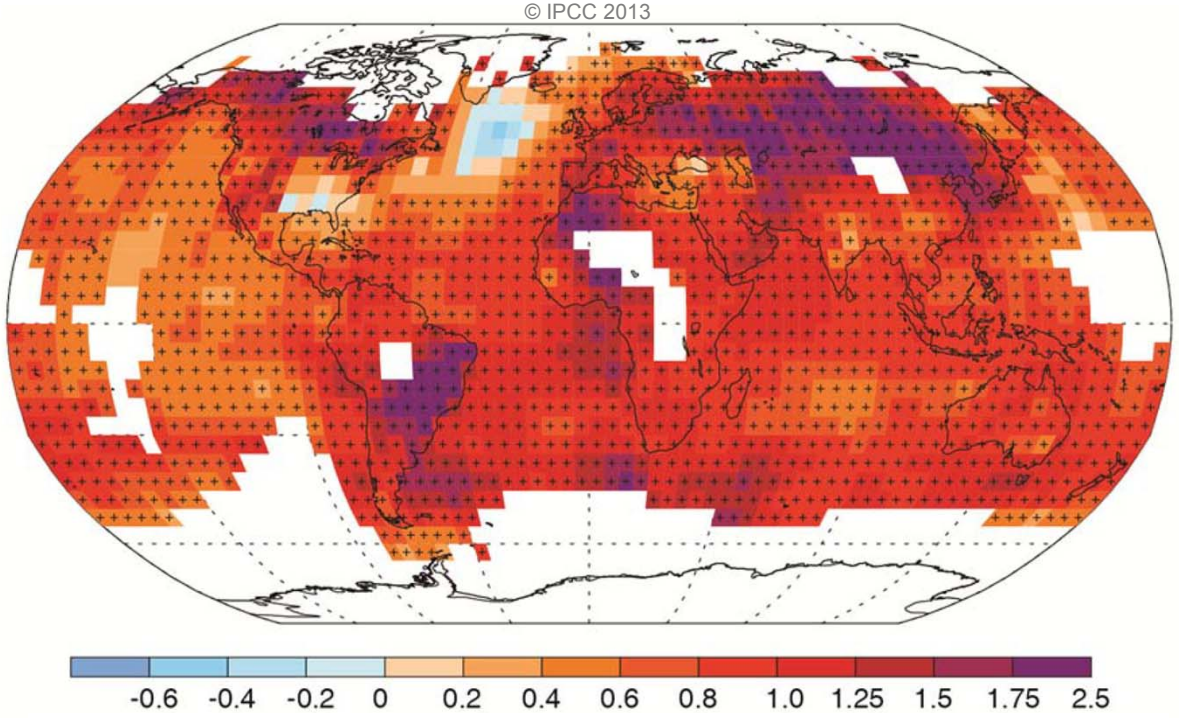


Fig. SPM.1a

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. SPM.1b



Temperature Difference 1901 to 2012 based on trend (°C)

Warming of the climate system is unequivocal

Thematic Focus Ele
TFE.1 | Water

The water cycle
vapour forms, an
water occurs prin
marily liquid wat
as surface water
snow and ice on
land, as much of
evaporated from
provide soil mois
The movement o
an important driv
atmosphere is cri
to the global circ

TS

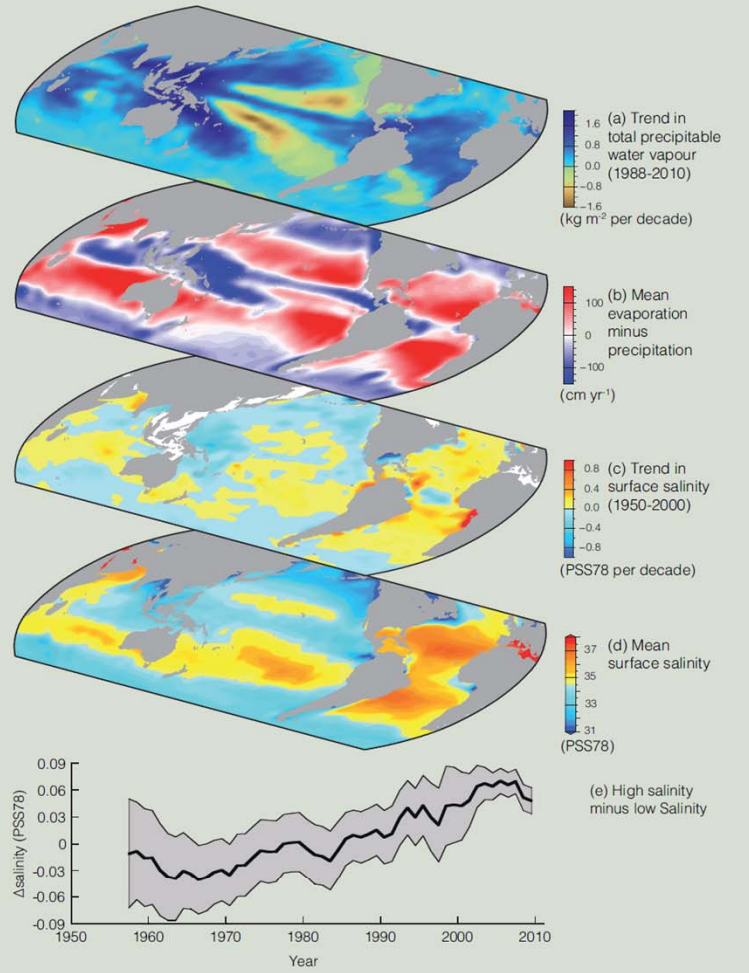
TS Technical Summary

Coordinating Lead Authors:
Thomas F. Stocker (Switzerland), Qin Dahe (China), Gian-Kasper Plattner (Switzerland)

Lead Authors:
Lisa V. Alexander (Australia), Simon K. Allen (Switzerland/New Zealand), Nathaniel L. Bindoff (Australia), Francois-Marie Bréon (France), John A. Church (Australia), Ulrich Cubasch

TS

TFE.1 (continued)



TFE.1, Figure 1 | Changes in sea surface salinity are related to the atmospheric patterns of evaporation minus precipitation ($E - P$) and trends in total precipitable water: (a) Linear trend (1988 to 2010) in total precipitable water (water vapour integrated from the Earth's surface up through the entire atmosphere) (kg m^{-2} per decade) from satellite observations. (b) The 1979–2005 climatological mean net evaporation minus precipitation (cm yr^{-1}) from meteorological reanalysis data. (c) Trend (1950–2000) in surface salinity (Practical Salinity Scale 78 (PSS78) per 50 years). (d) The climatological mean surface salinity (PSS78) (blues <35; yellows-reds >35). (e) Global difference between salinity averaged over regions where the sea surface salinity is greater than the global mean sea surface salinity ("High Salinity") and salinity averaged over regions with values below the global mean ('Low Salinity'). For details of data sources see Figure 3.21 and FAQ 3.2, Figure 1. {3.9}

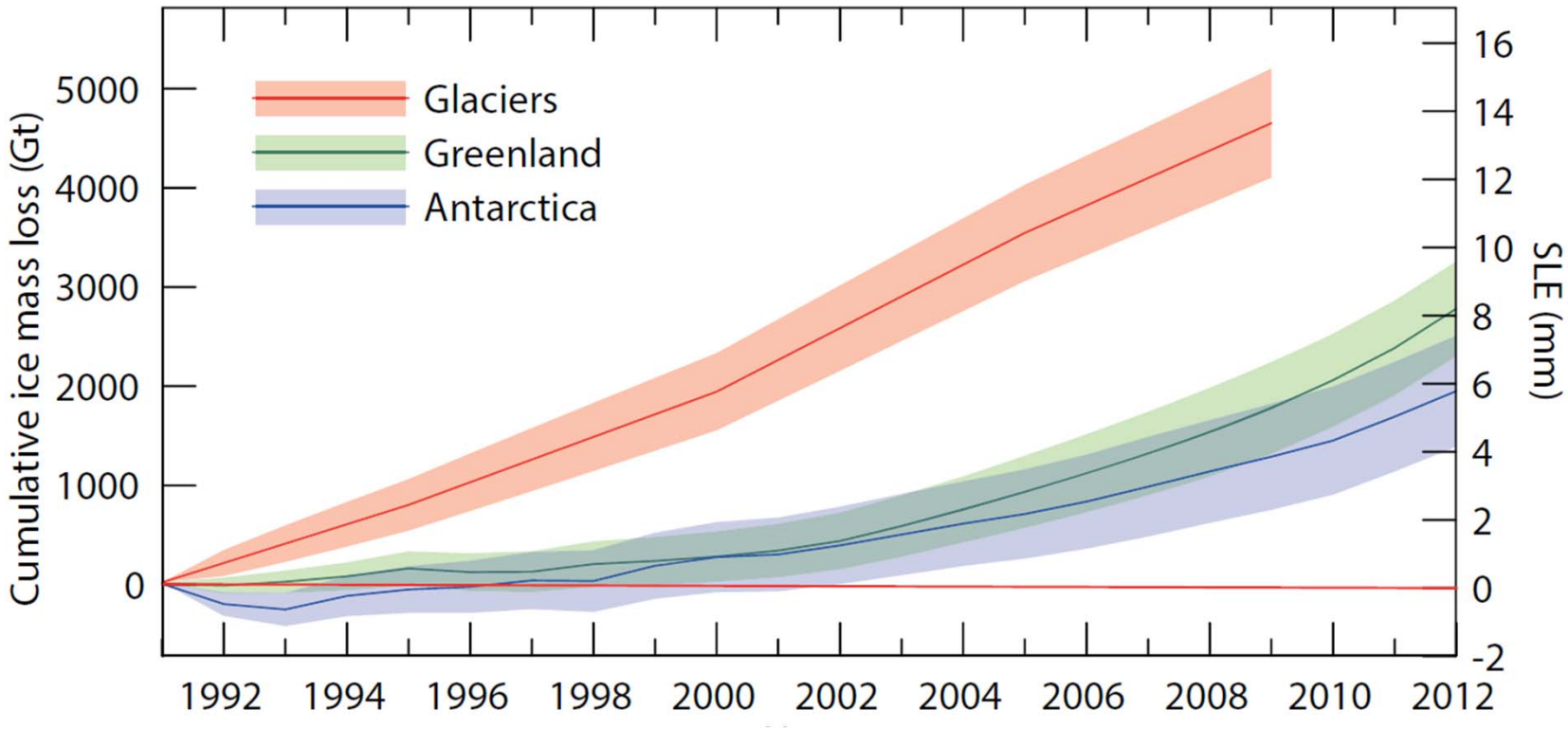


Fig. TS.3

Ice loss from	Glaciers	226 (±60%) Gt yr^{-1}	(1993-2009)
	Greenland	215 (±25%) Gt yr^{-1}	(2002-2011)
	Antarctica	147 (±50%) Gt yr^{-1}	(2002-2011)

100 Gt yr^{-1} of ice loss corresponds to 0.28 mm yr^{-1} of global mean sea level rise

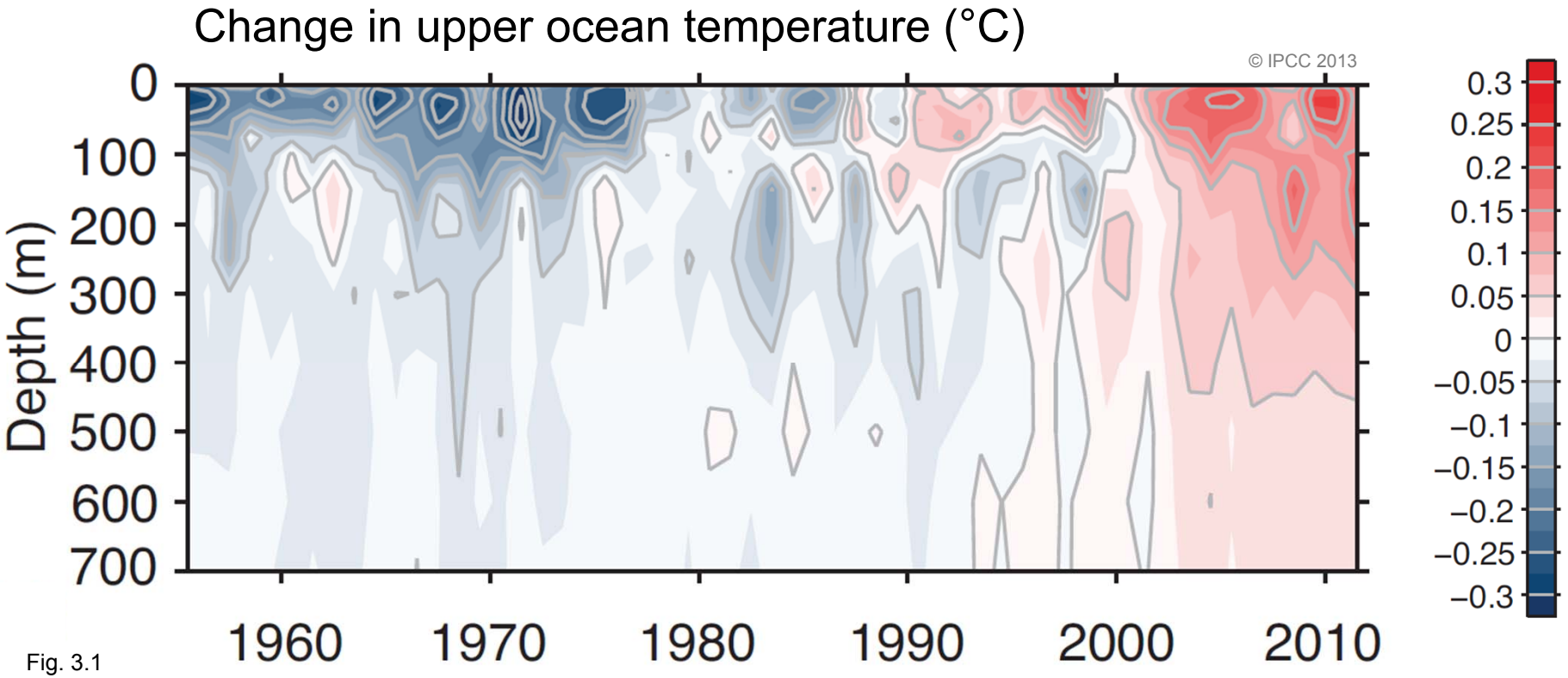
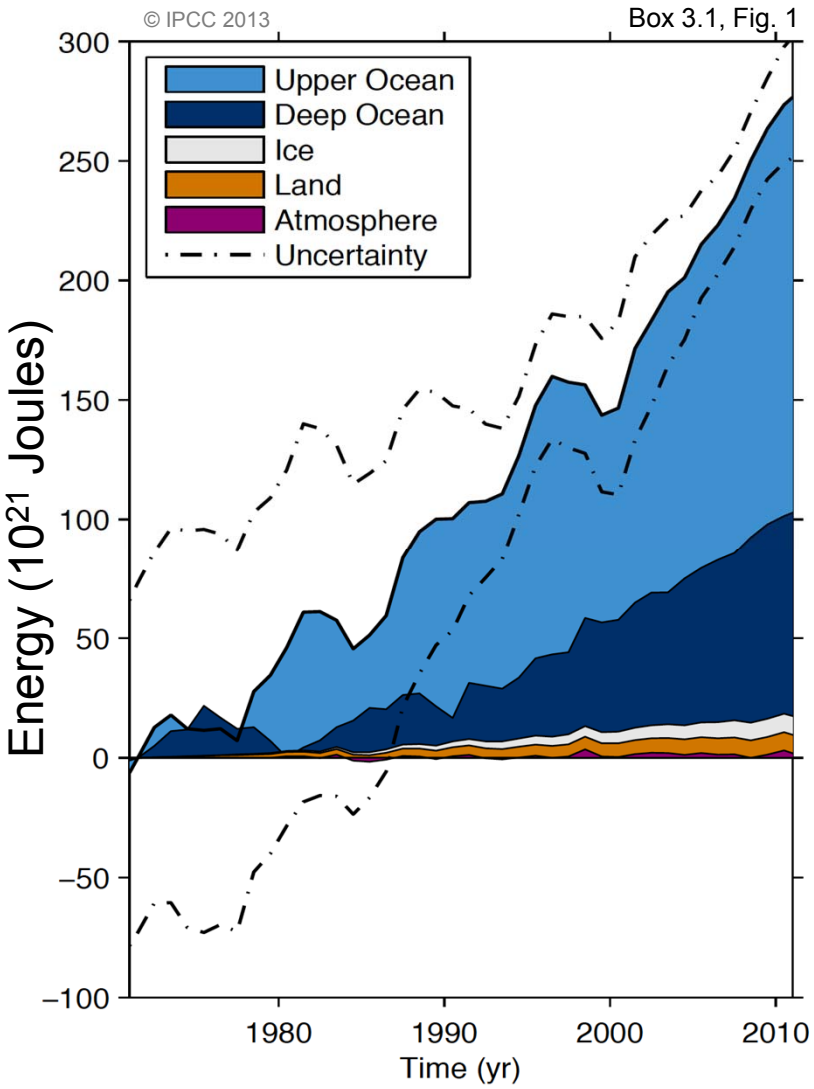


Fig. 3.1

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.



Ocean warming dominates the increase in energy stored in the climate system, accounting for more than 90% of the energy accumulated between 1971 and 2010 (*high confidence*).

Understanding

Why has it changed?

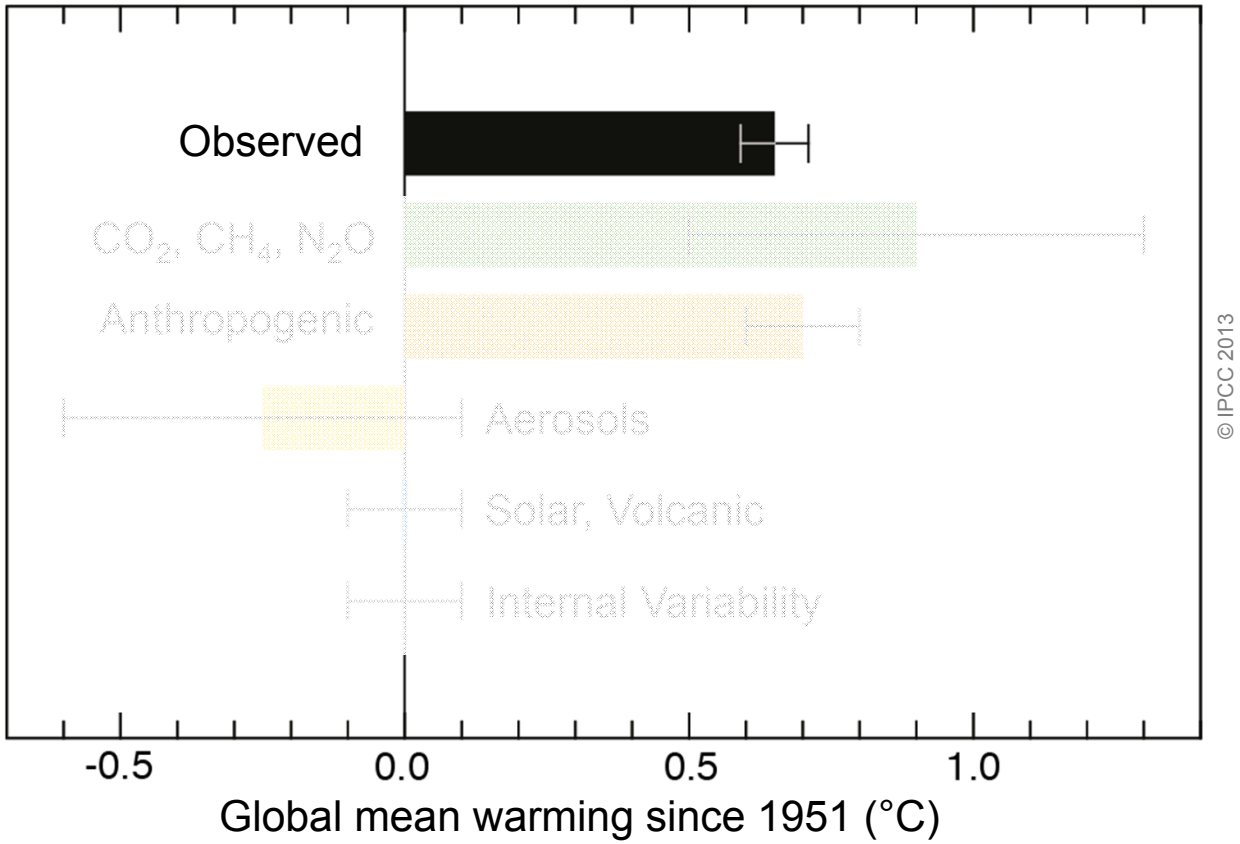


Fig. TS.10

The observed warming 1951−2010 is approximately 0.6°C to 0.7°C.

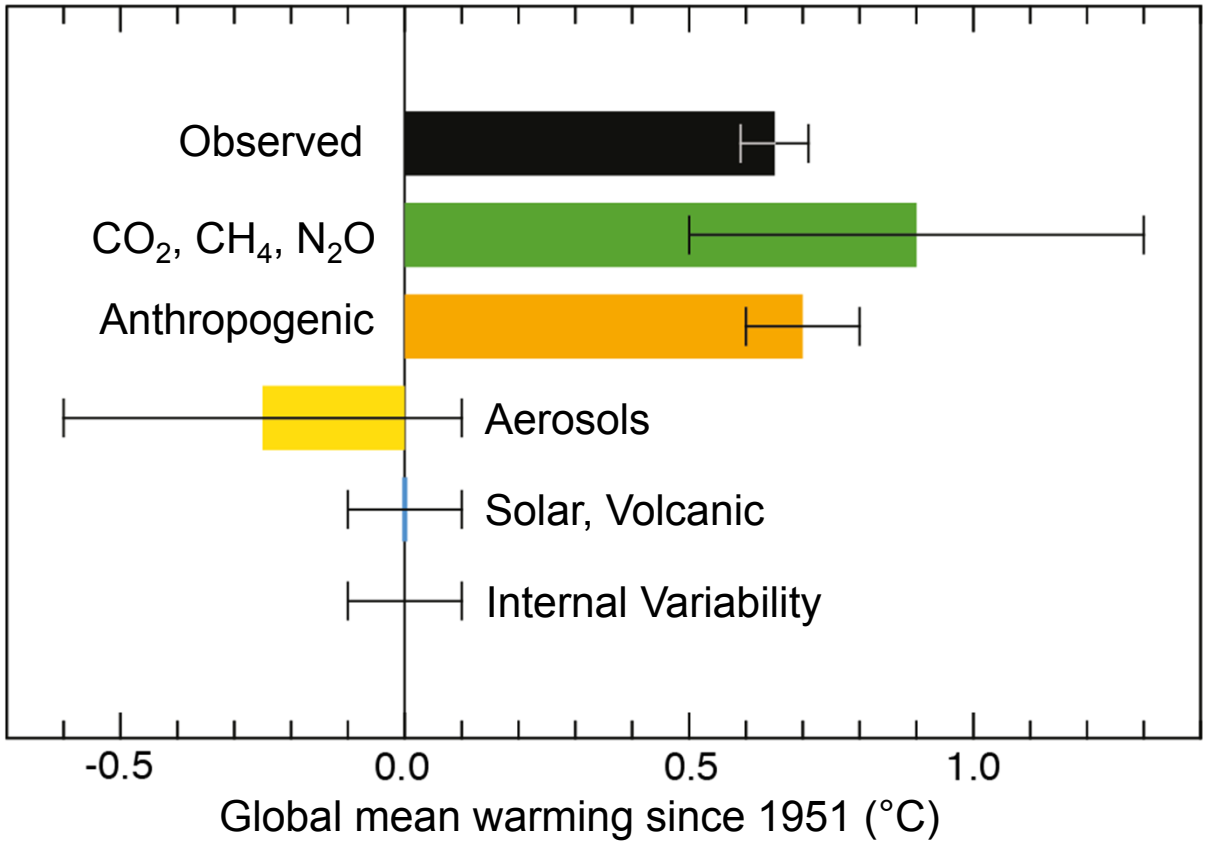


Fig. TS.10

It is *extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century.

Future

How will it change?

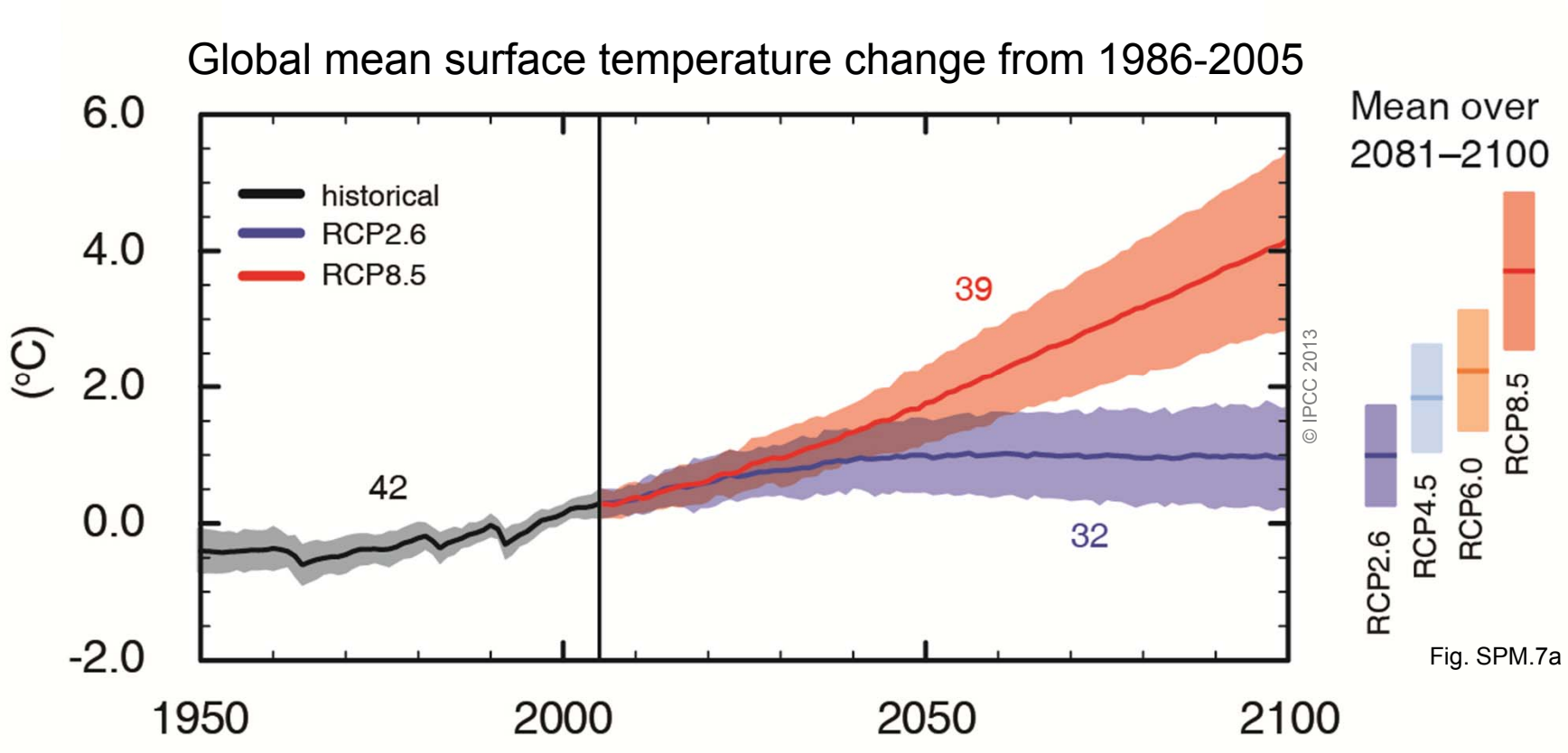
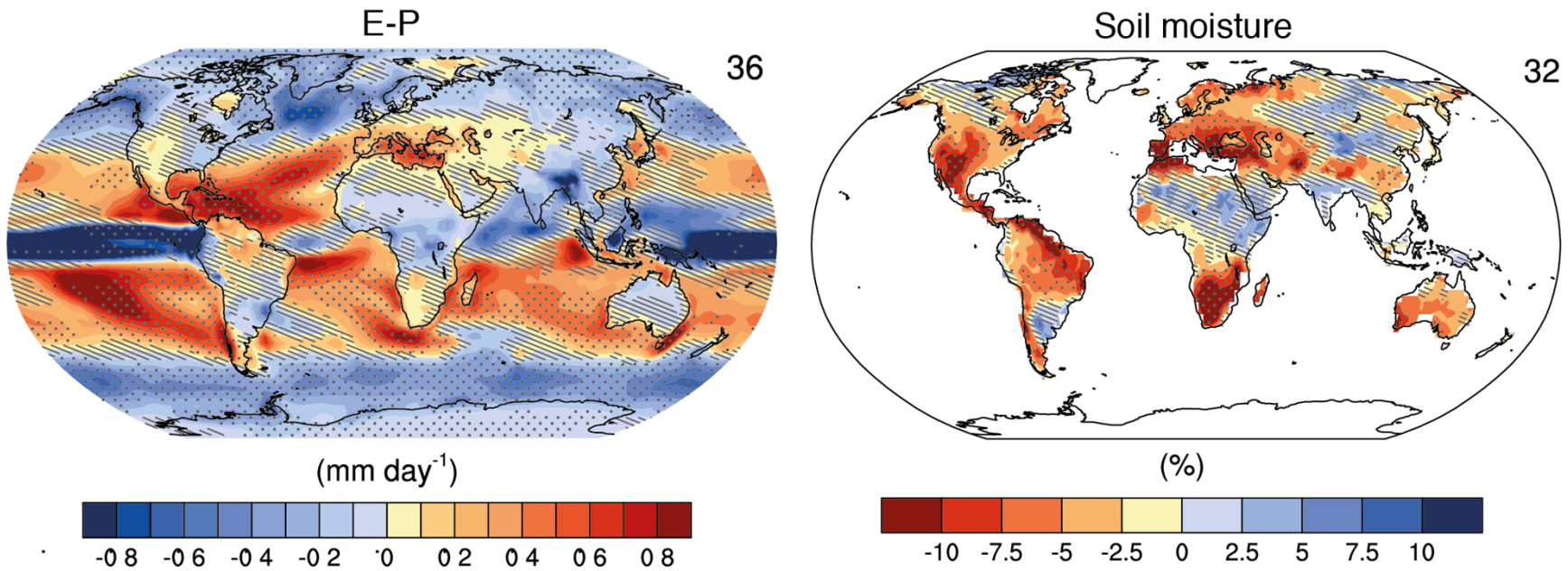


Fig. SPM.7a

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.

Change in water cycle properties from 1986-2005 to 2081-2100 in RCP8.5



TS TFE.1, Fig. 2

The contrast in precipitation between wet and dry regions and between wet and dry seasons will increase, [...]

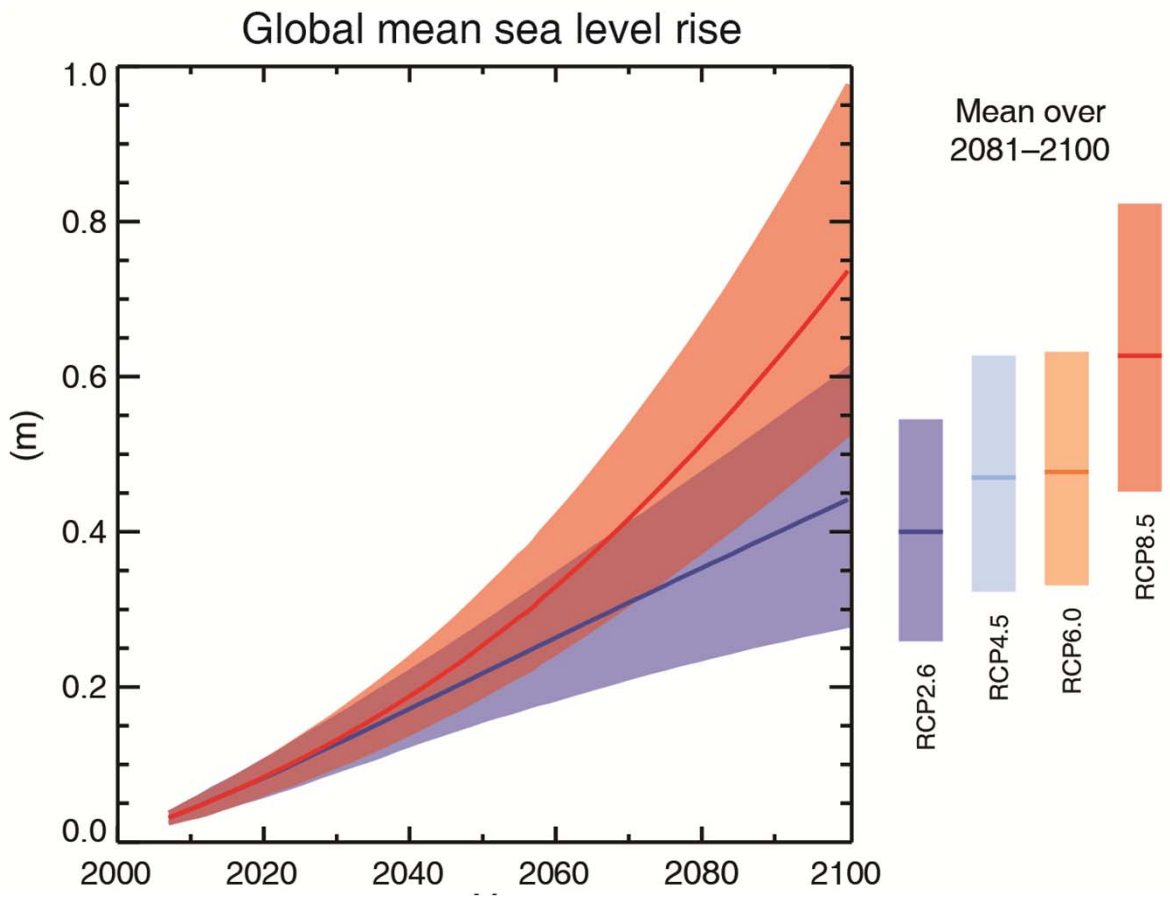


Fig. SPM.9

RCP2.6 (2081-2100), *likely* range: **26 to 55 cm**

RCP8.5 (in 2100), *likely* range: **52 to 98 cm**

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

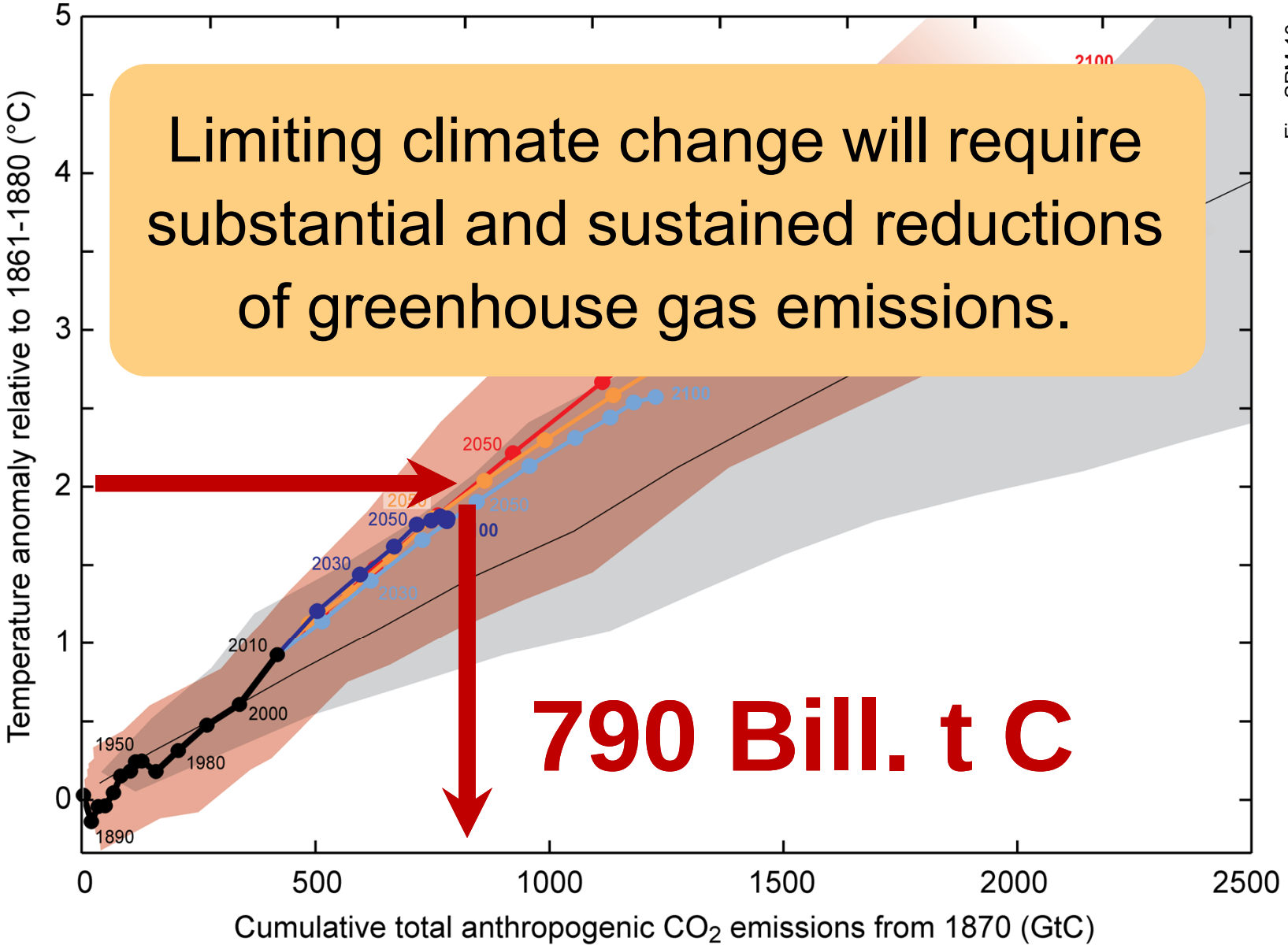
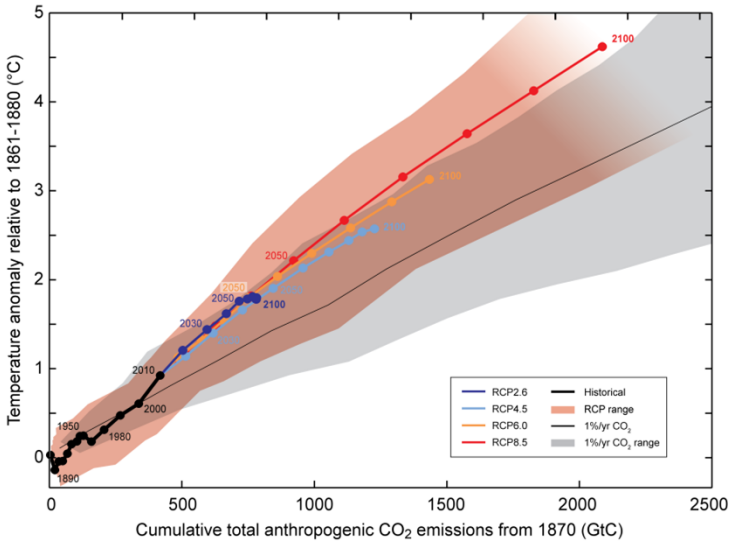


Fig. SPM.10

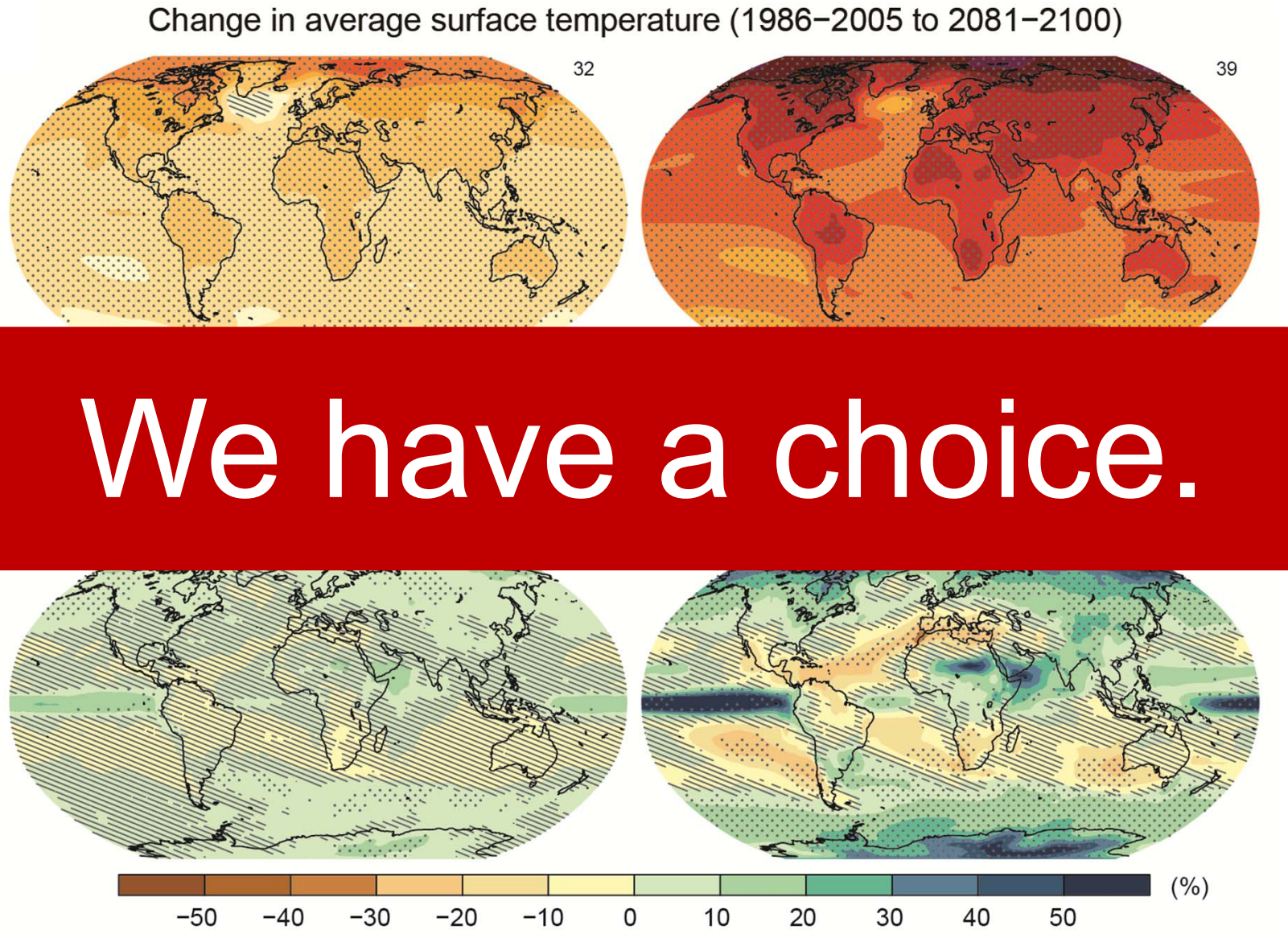


Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.

Budget for the 2°C target:	790 Bill. t C
CO_2 emitted until 2011:	−515 Bill. t C
Remaining emissions:	**275 Bill. t C**
CO_2 emissions 2012:	***9.7 Bill. t C/yr***

RCP2.6
CO_{2eq} = 475 ppm

RCP8.5
CO_{2eq} = 1313 ppm



IPCC 2013, Fig. SPM.8

We have a choice.

ipcc
INTERGOVERNMENTAL PANEL ON climate change
WMO UNEP