

Retos y oportunidades de la adaptación al cambio climático

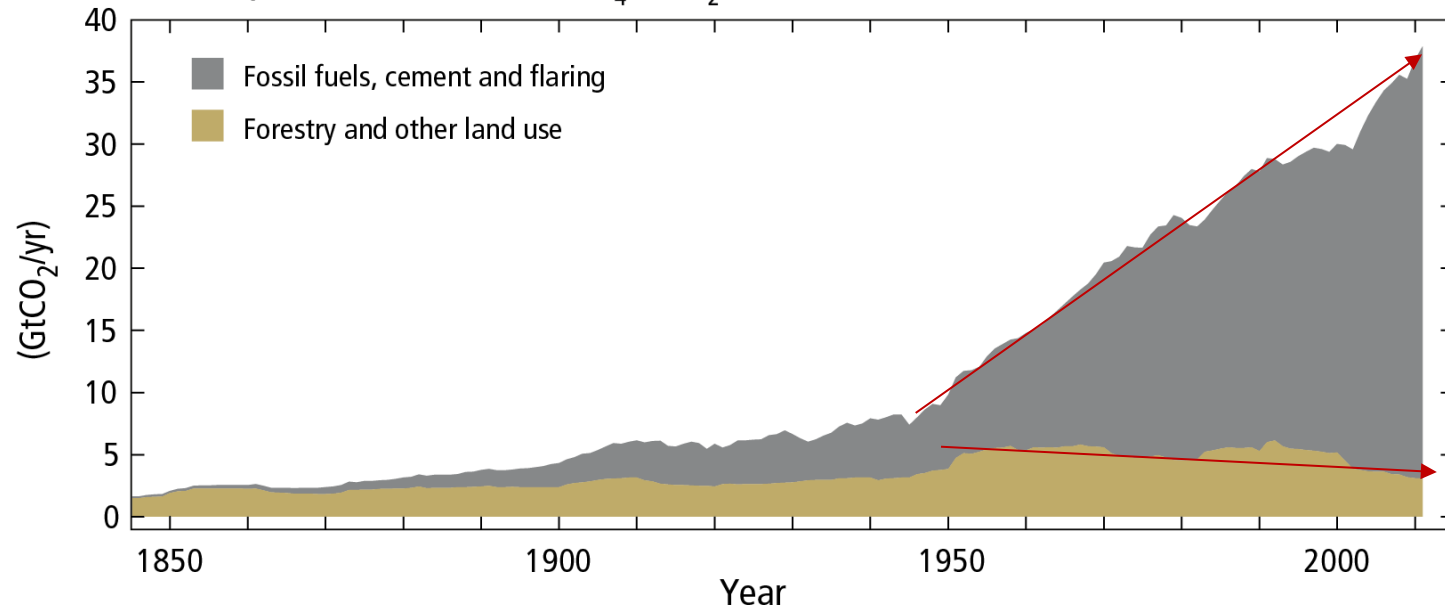
José Manuel Moreno

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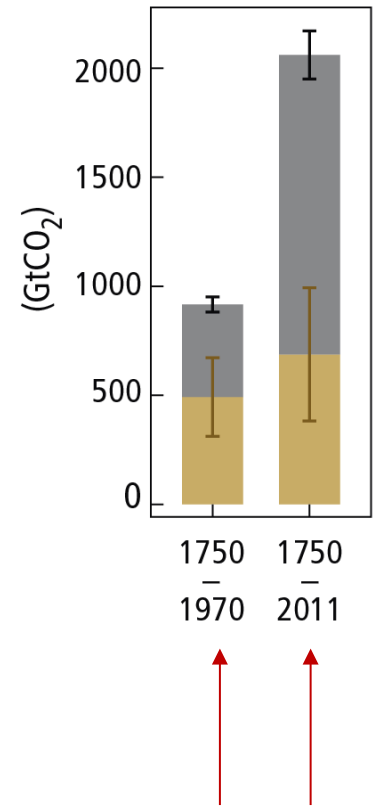
Exvicepresidente del Grupo II y miembro de la Mesa del IPCC

Global anthropogenic CO₂ emissions

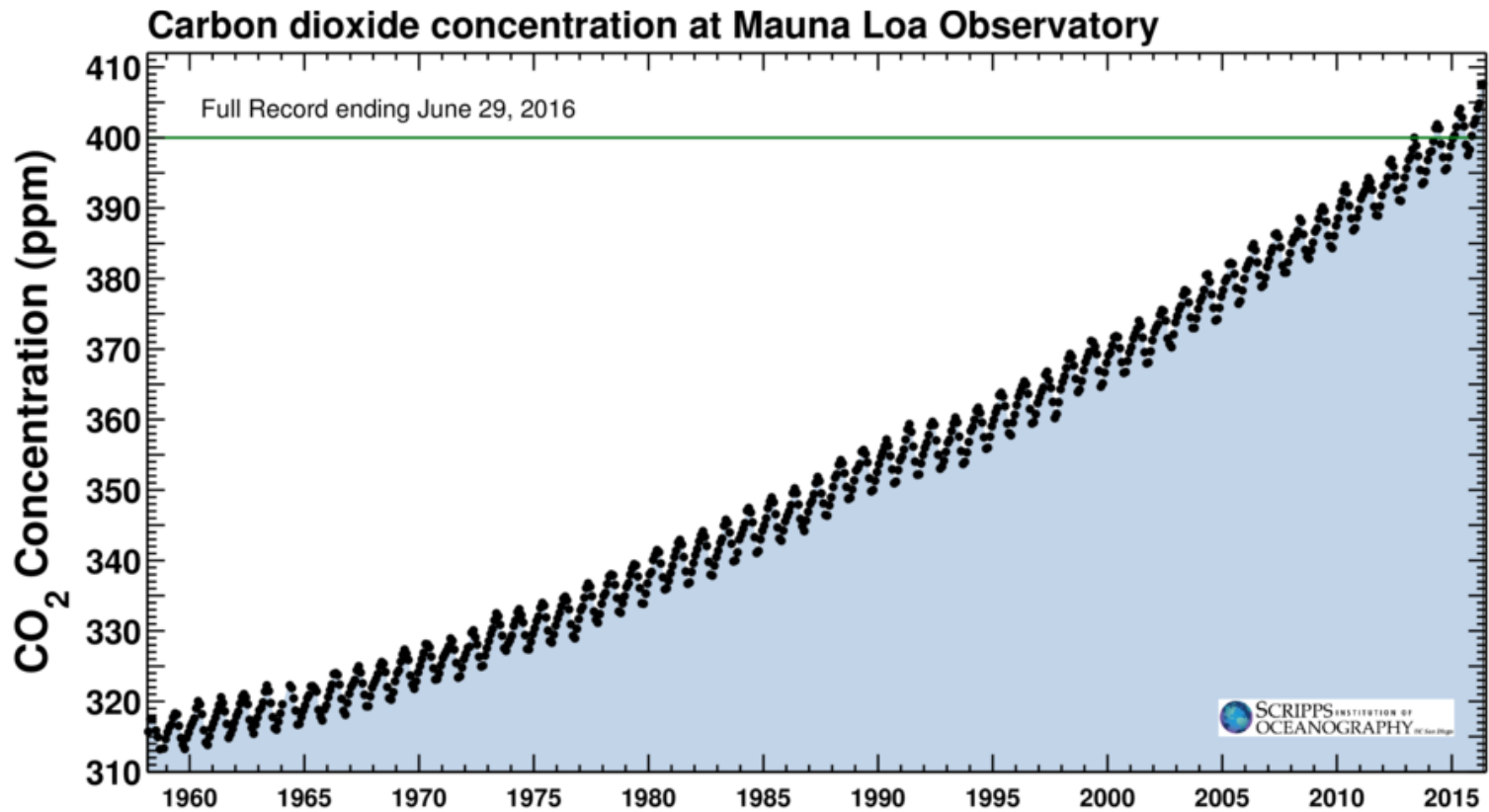
Quantitative information of CH₄ and N₂O emission time series from 1850 to 1970 is limited



Cumulative CO₂ emissions



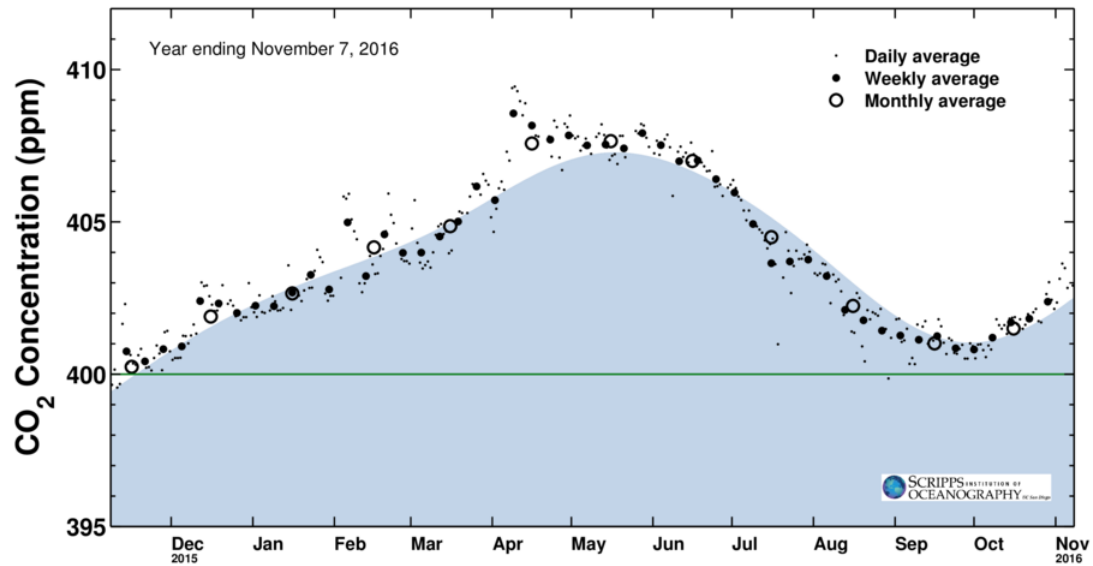
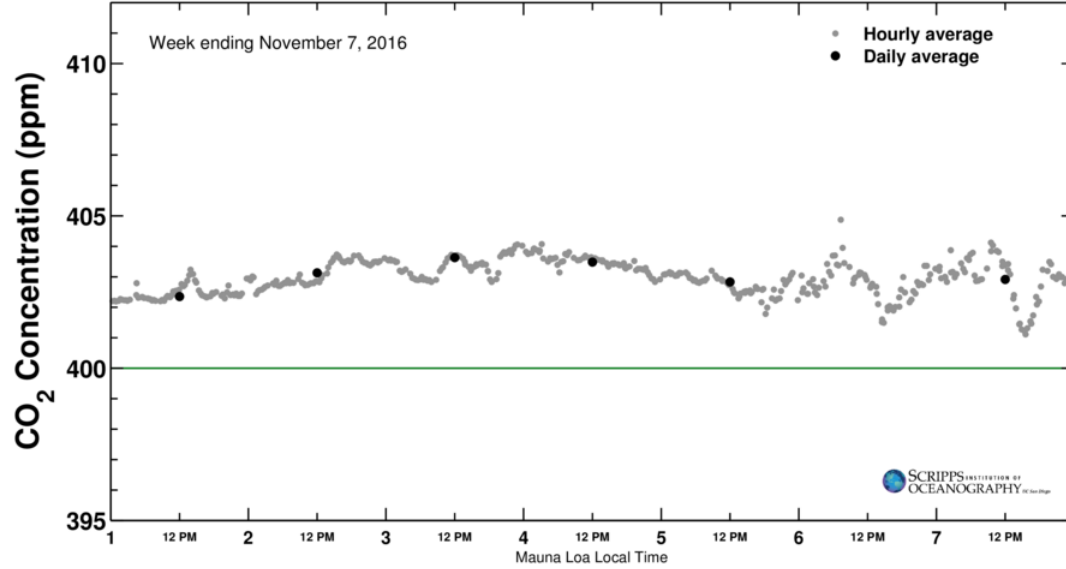
La concentración de CO₂ en el tiempo



Latest CO₂ reading
November 07, 2016

402.91 ppm

Carbon dioxide concentration at Mauna Loa Observatory



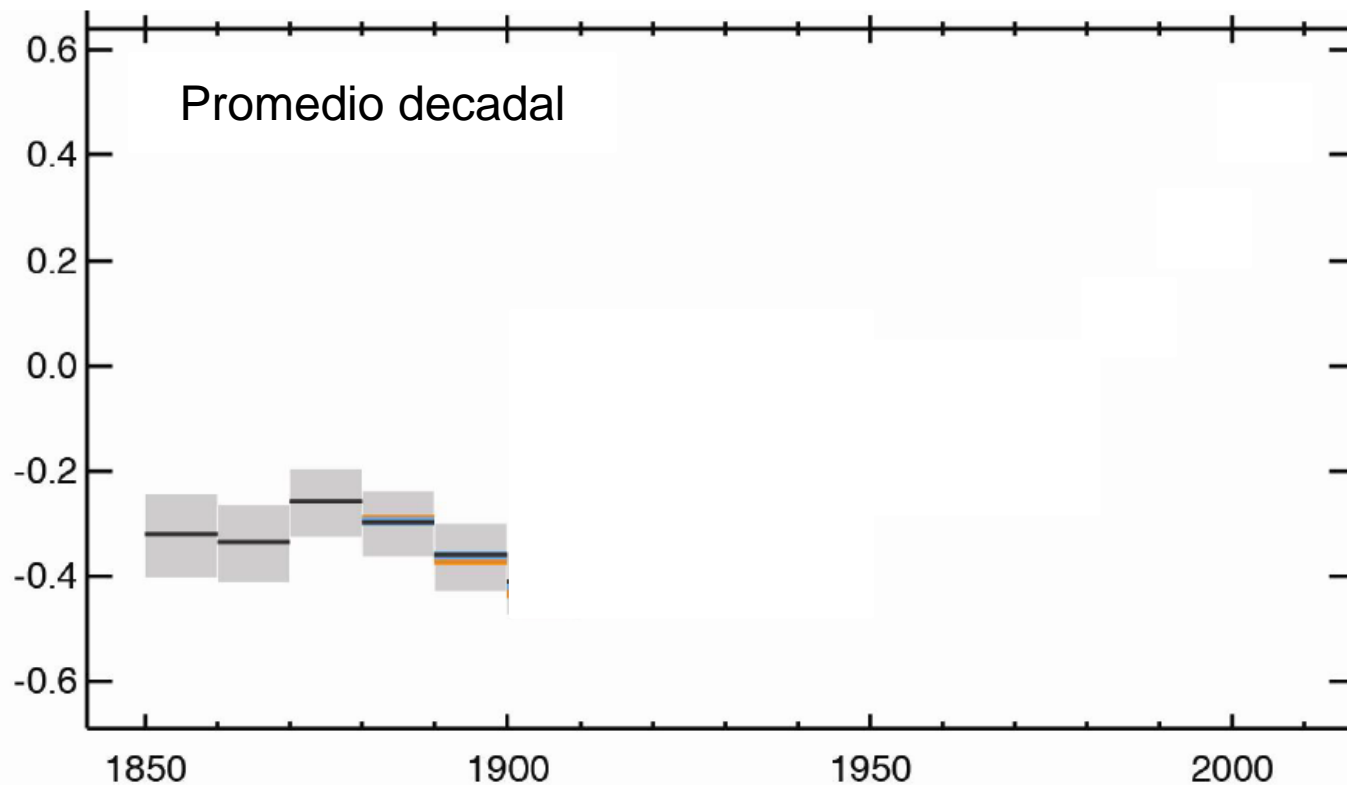
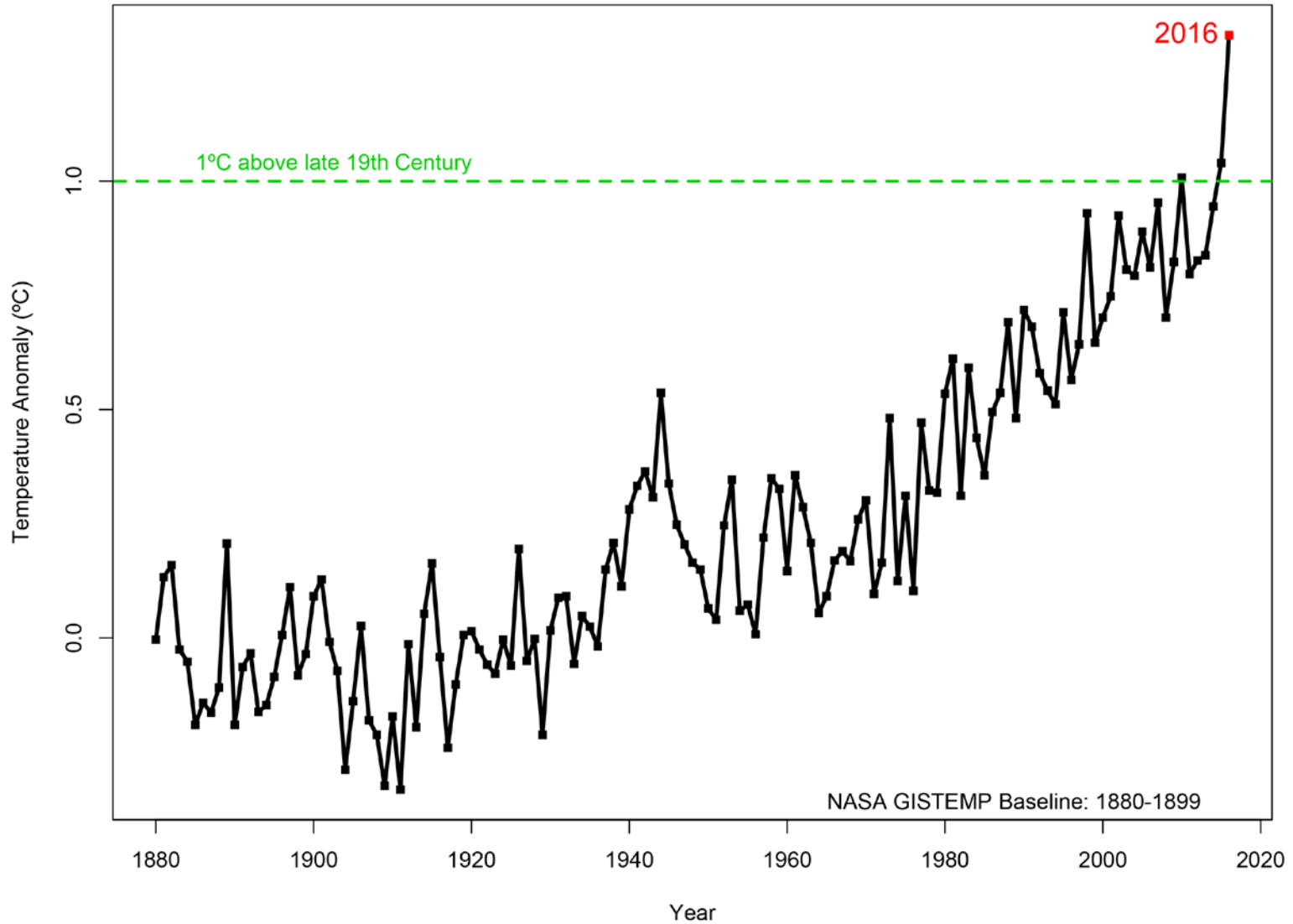


Fig. SPM.1a

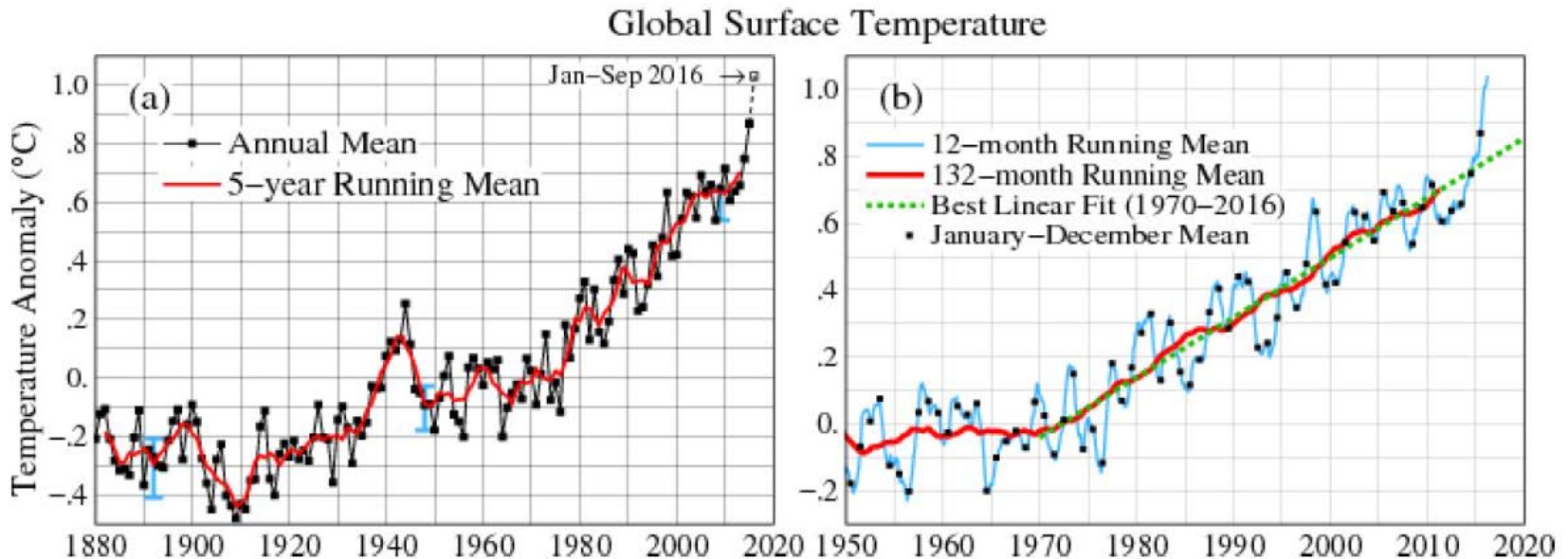
Cada una de las tres últimas décadas ha sido sucesivamente más caliente en la superficie de la Tierra que cualquier otra década precedente desde 1850

Global Mean Surface Temperature (January-June)

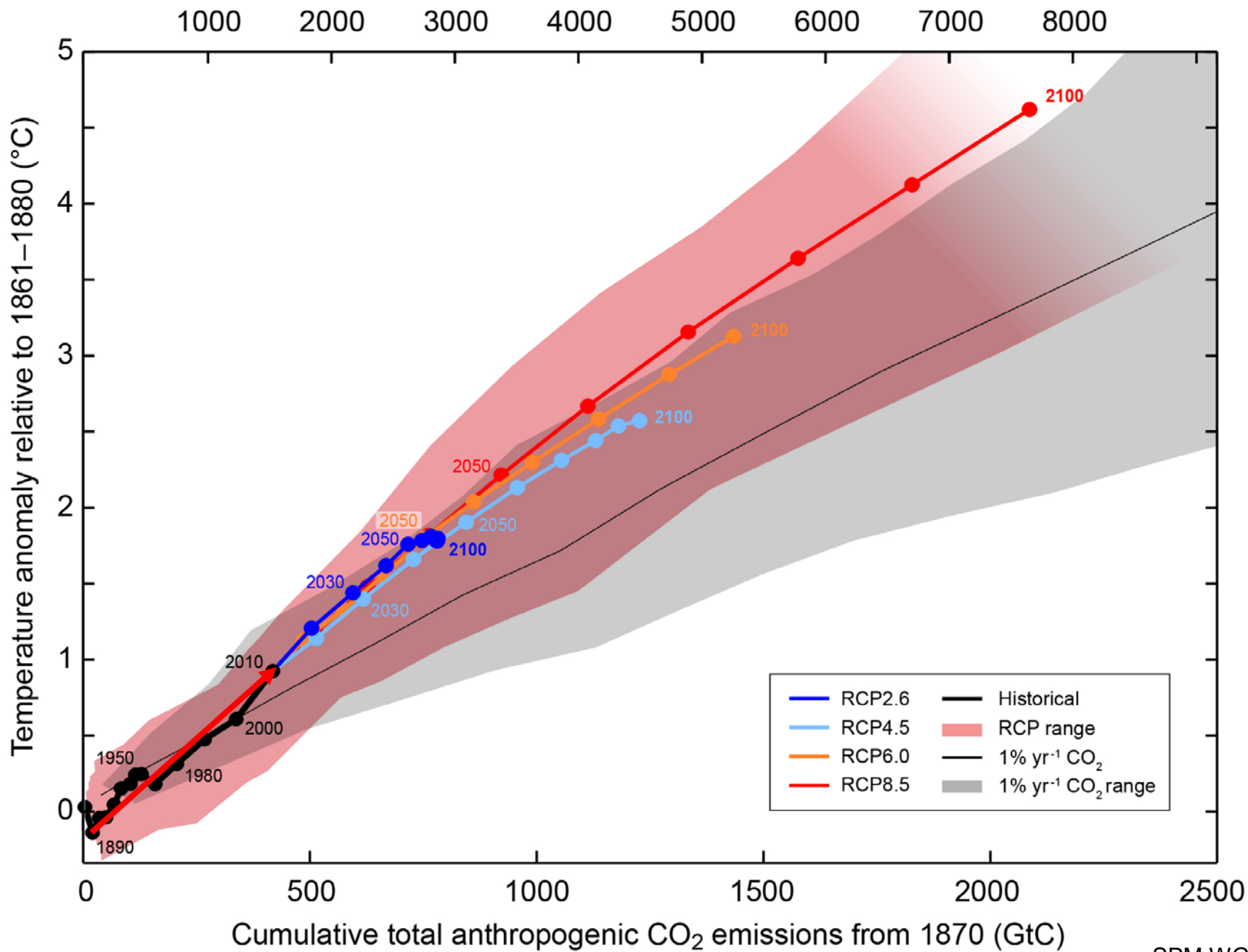


September 2016 Global Temperature Record

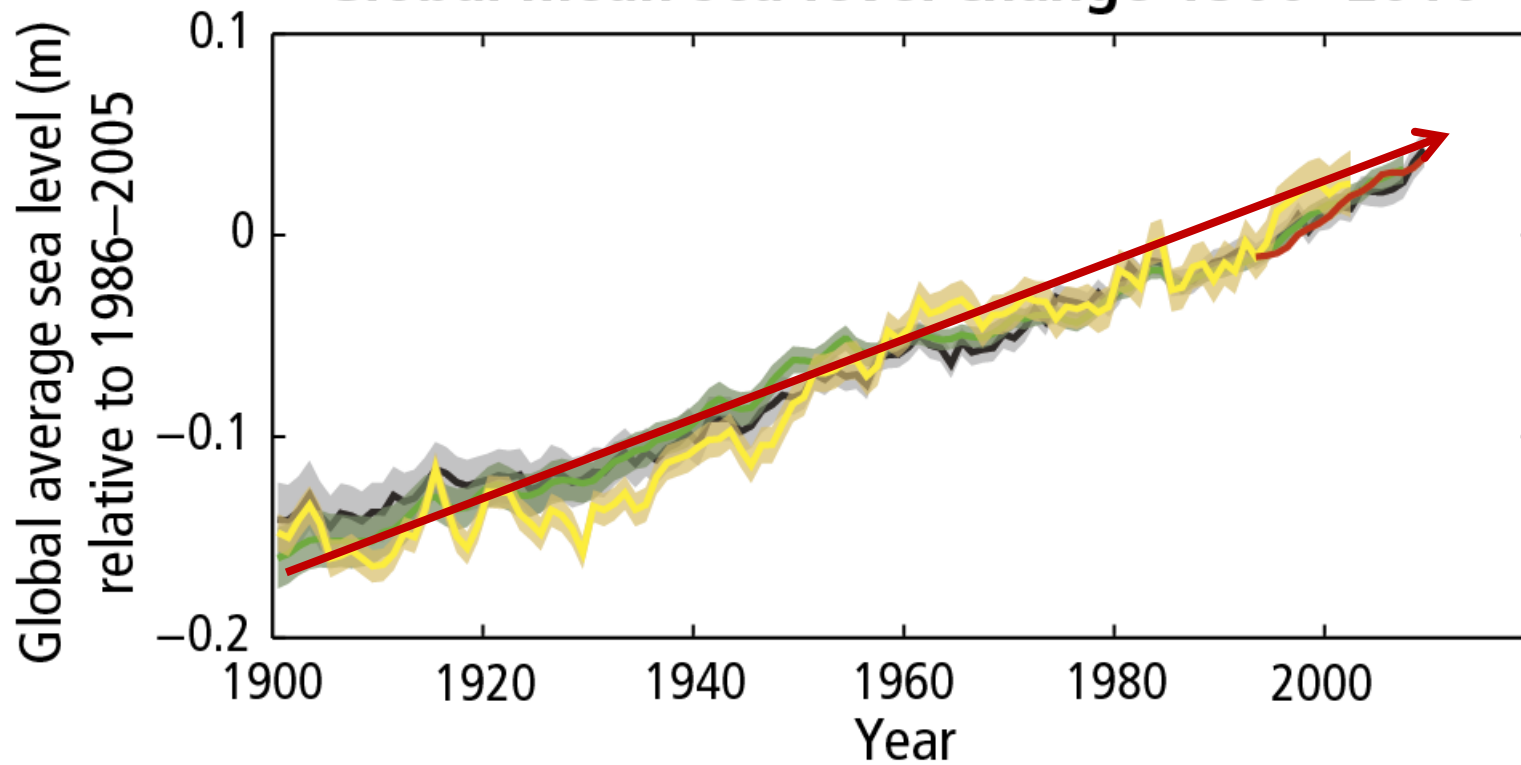
September 2016 was globally the warmest September in the instrumental record, i.e., since 1880. The 12-month running mean is 1.04°C relative to 1951-1980 or 1.31°C relative to 1880-1920. It is apparent that 2016 will break the prior record by a wide margin.



Cumulative total anthropogenic CO₂ emissions from 1870 (GtCO₂)



Global mean sea level change 1900–2010



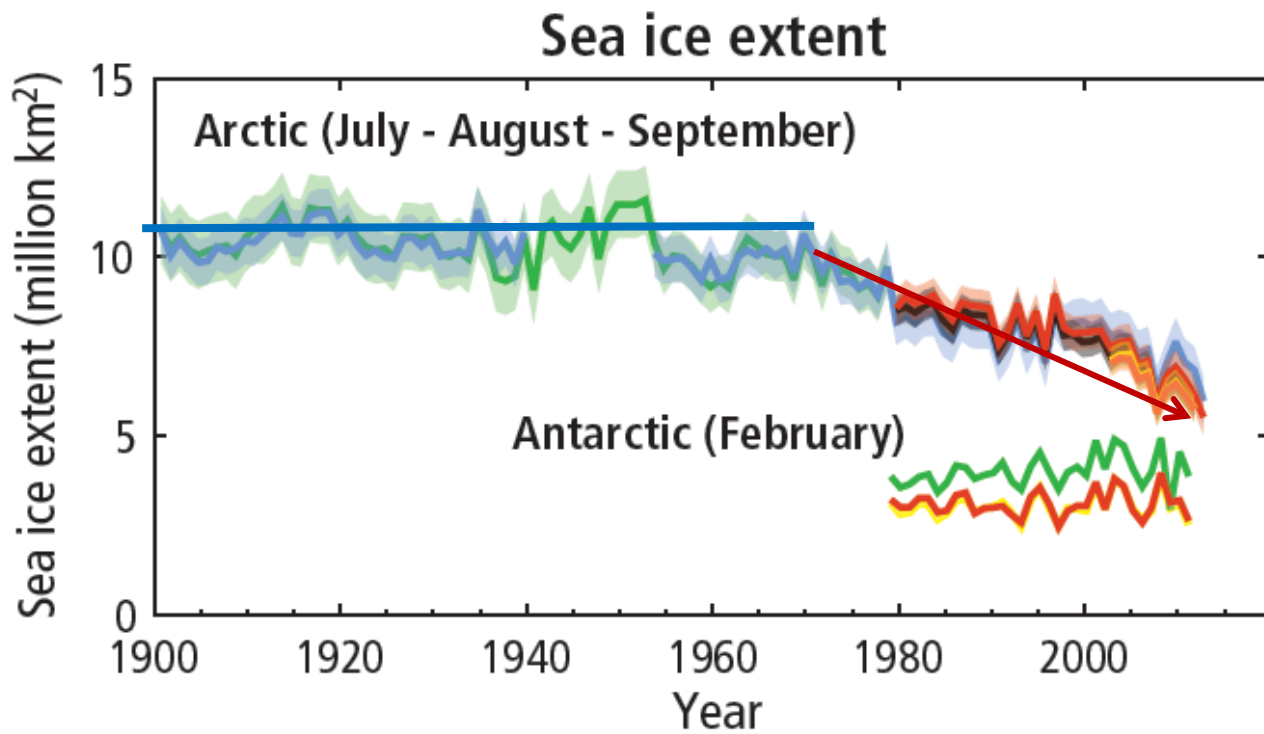
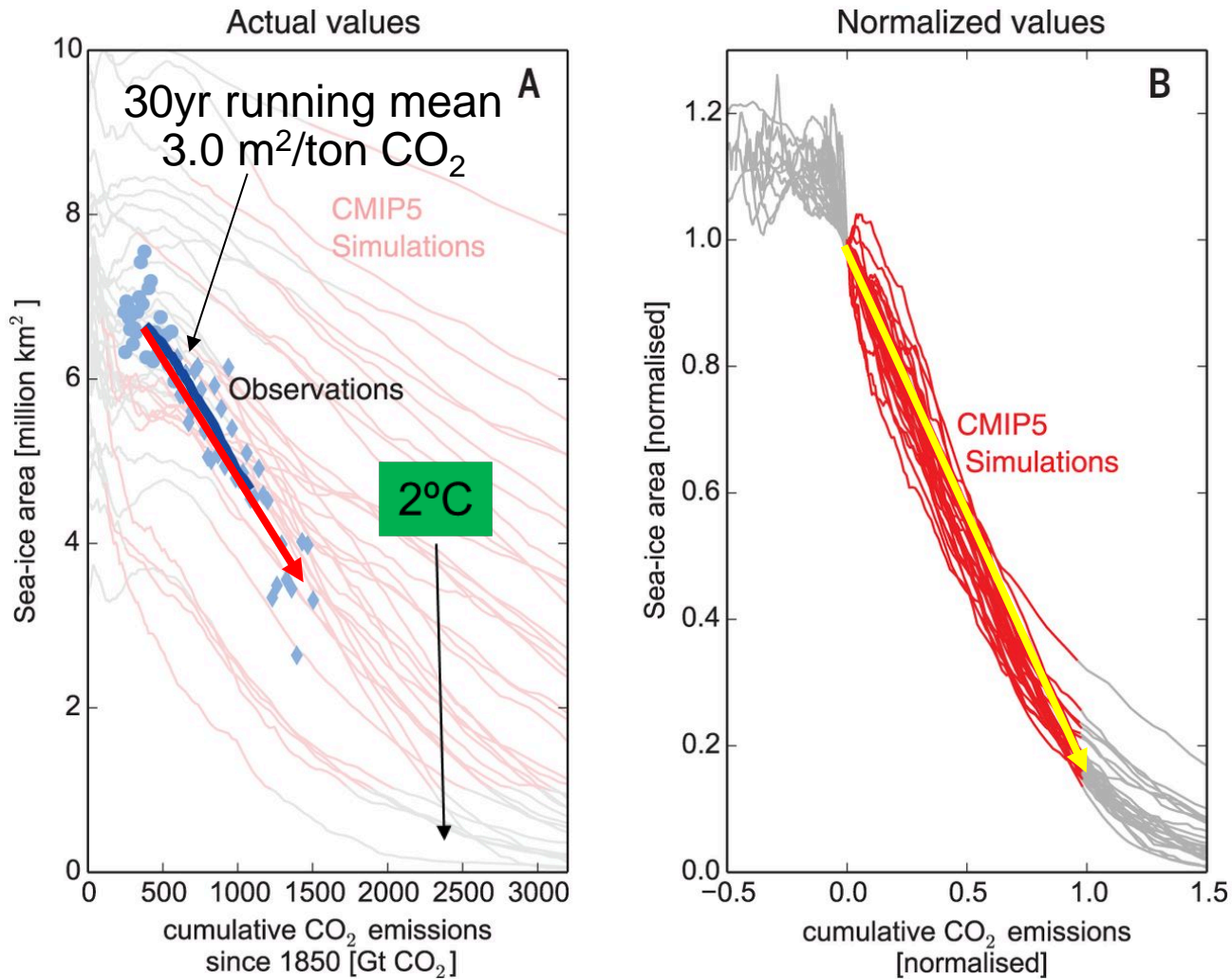


Fig. 1 Relationship between September Arctic sea-ice area and cumulative anthropogenic CO₂ emissions.



Dirk Notz, and Julienne Stroeve *Science* 2016;science.aag2345



Observed changes in surface temperature (1901-2012)

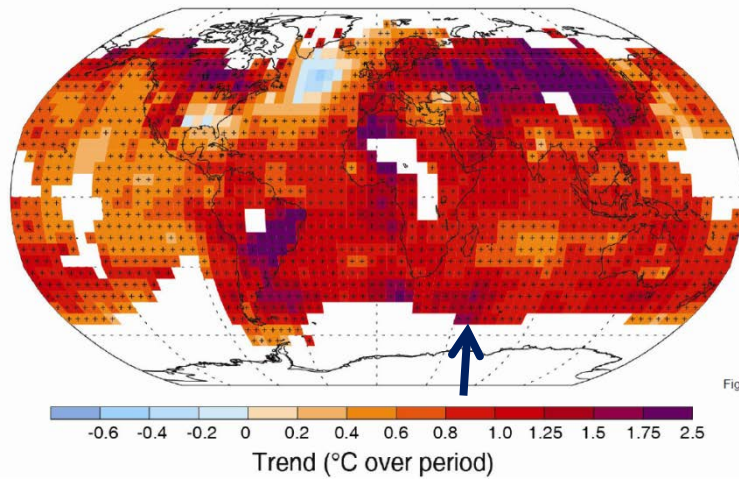
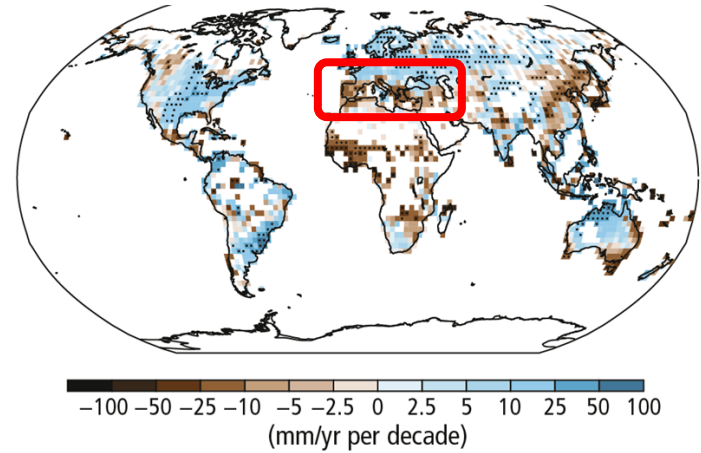


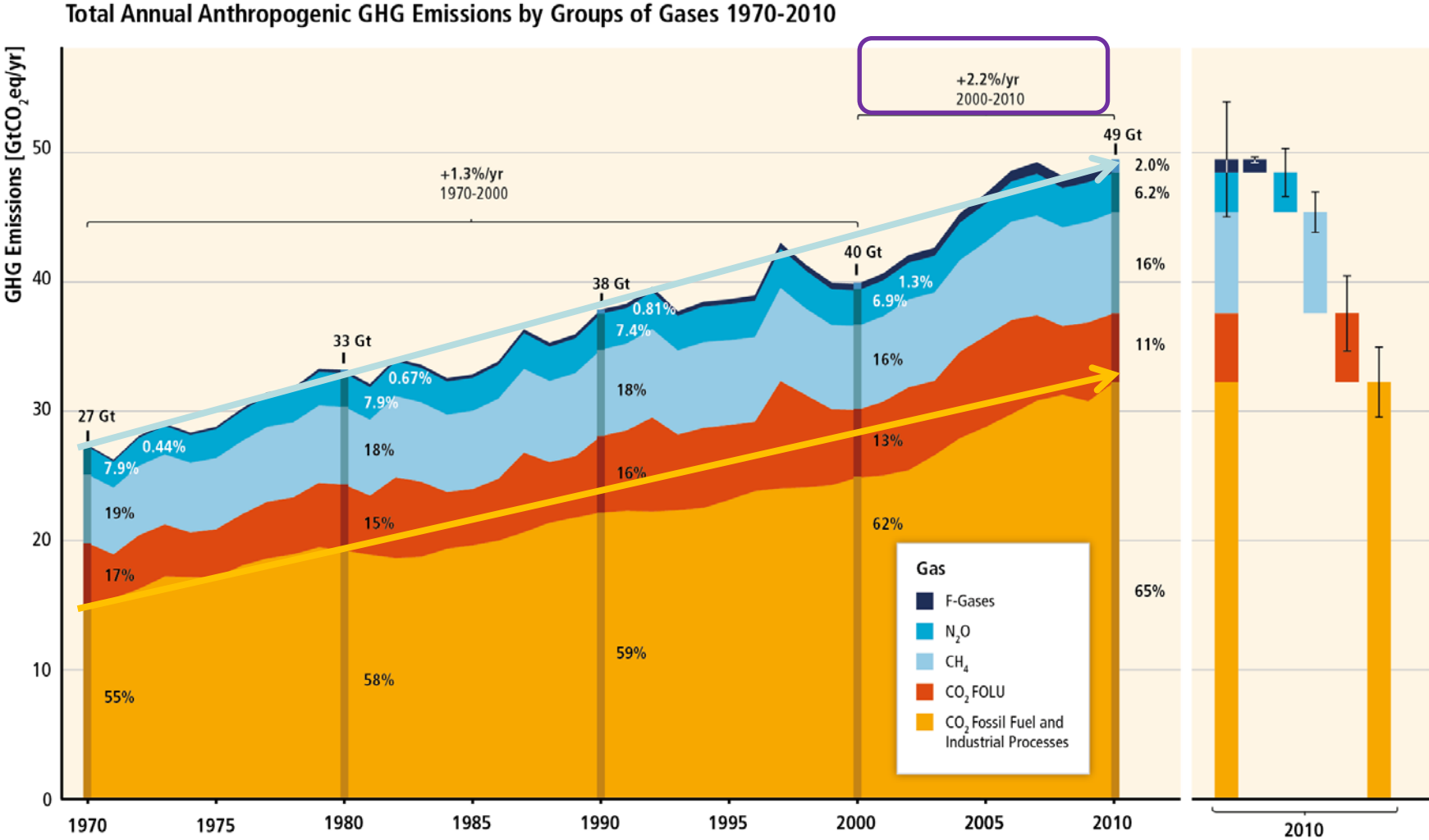
Fig. SPM.1b

Observed change in precipitation over land (1951-2010)



Warming of the climate system is *unequivocal*

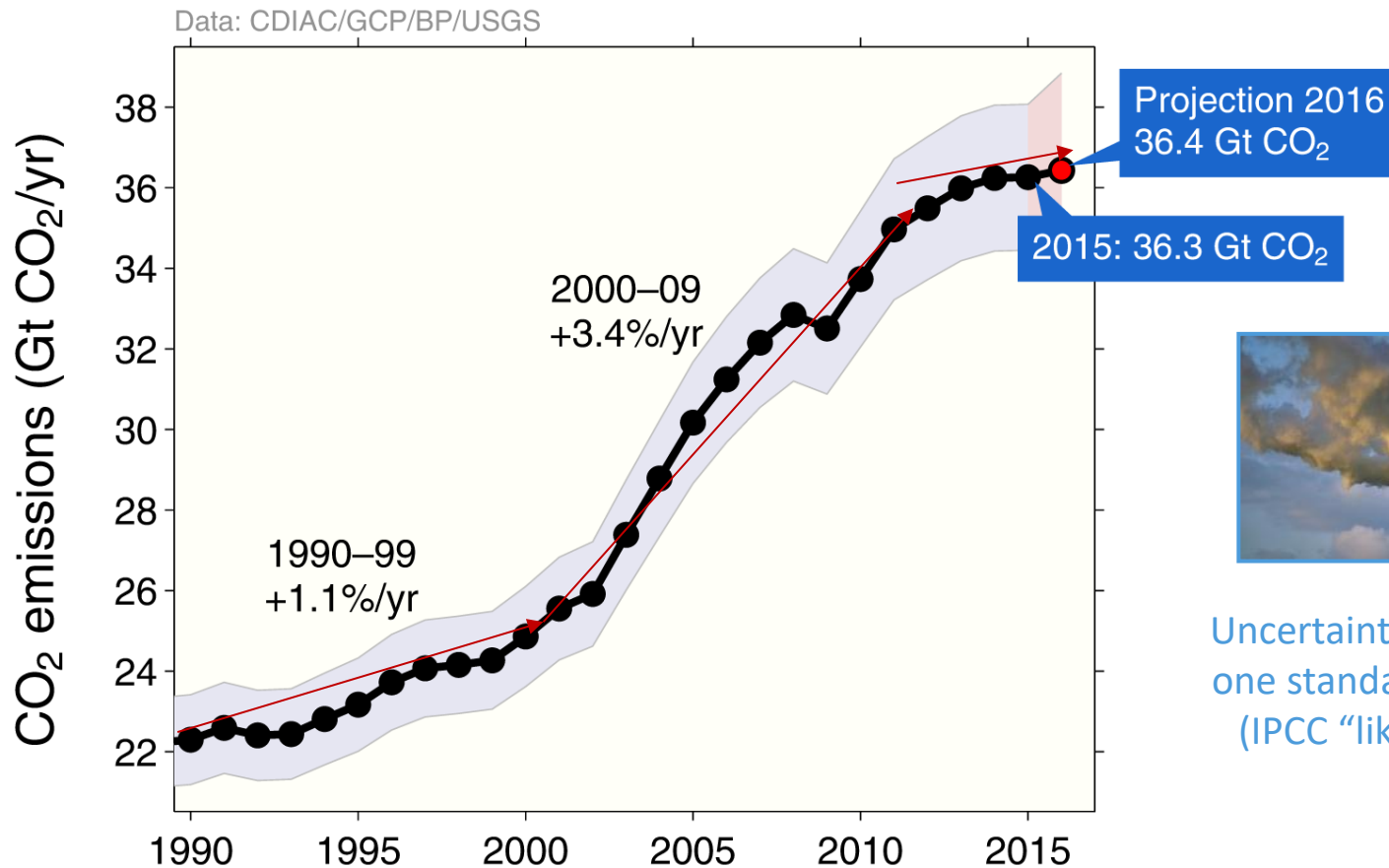
Las emisiones de GHG se aceleran a pesar de los esfuerzos de reducción. El mayor crecimiento de las emisiones es debido al CO₂ procedente de la combustión de combustibles fósiles y procesos industriales



Emissions from fossil fuel use and industry

Global emissions from fossil fuel and industry: 36.3 ± 1.8 GtCO₂ in 2015, 63% over 1990

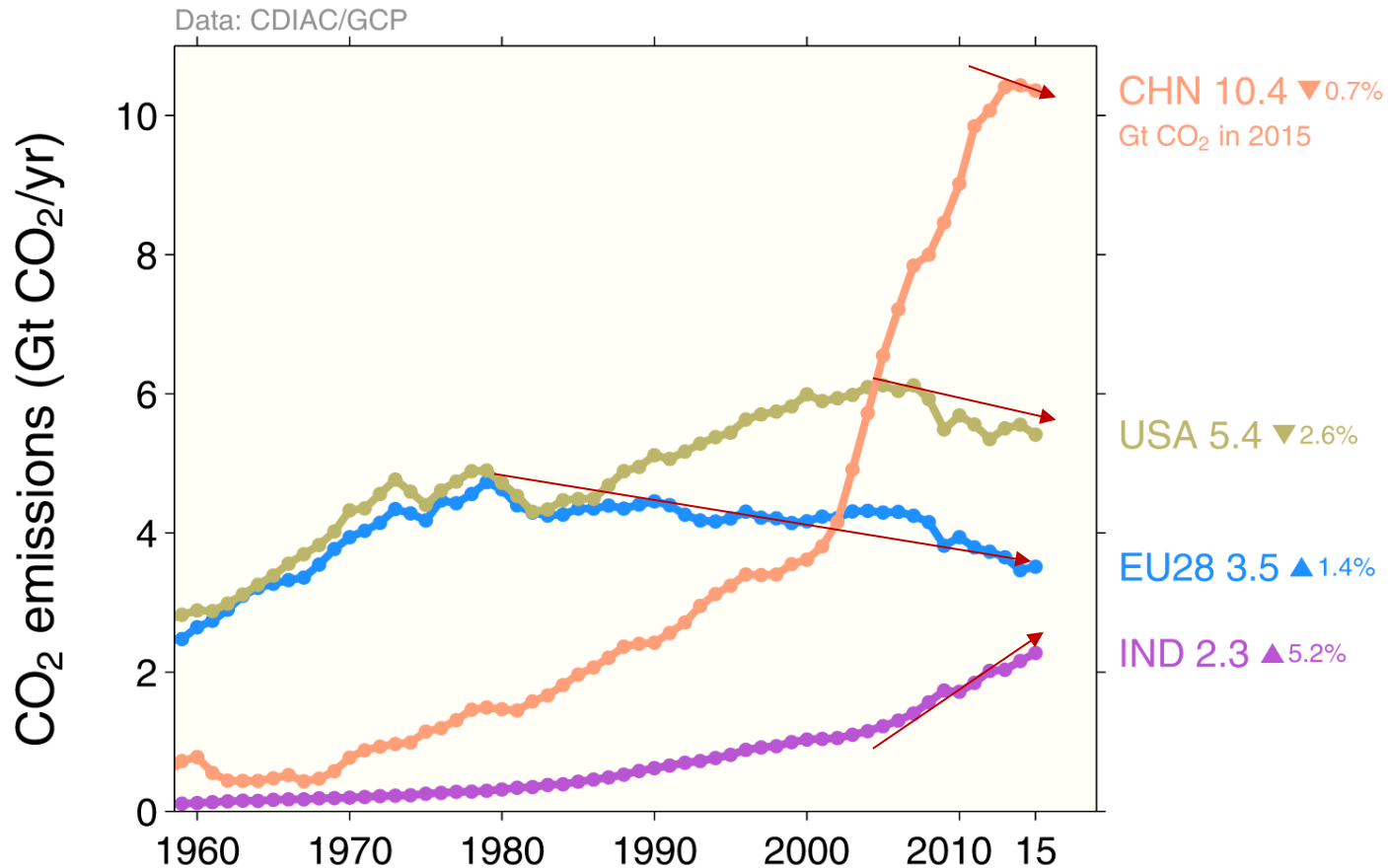
- Projection for 2016: 36.4 ± 2.3 GtCO₂, 0.2% higher than 2015



Uncertainty is $\pm 5\%$ for one standard deviation (IPCC “likely” range)

Top emitters: fossil fuels and industry (absolute)

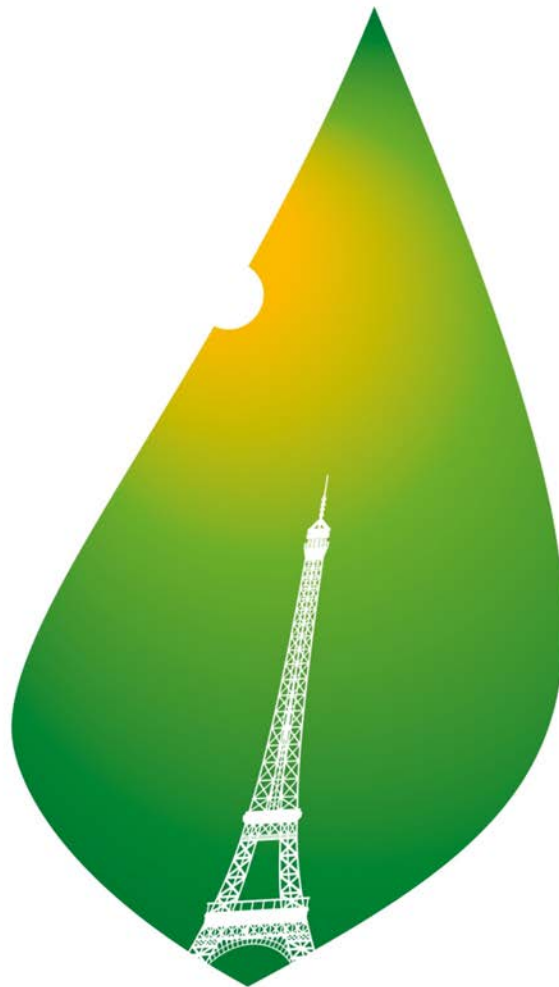
The top four emitters in 2015 covered 59% of global emissions
 China (29%), United States (15%), EU28 (10%), India (6%)



Bunker fuels are used for international transport is 3.1% of global emissions.

Statistical differences between the global estimates and sum of national totals are 1.2% of global emissions.

Source: [CDIAC](#); [Le Quéré et al 2016](#); [Global Carbon Budget 2016](#)



COP21 • CMP11

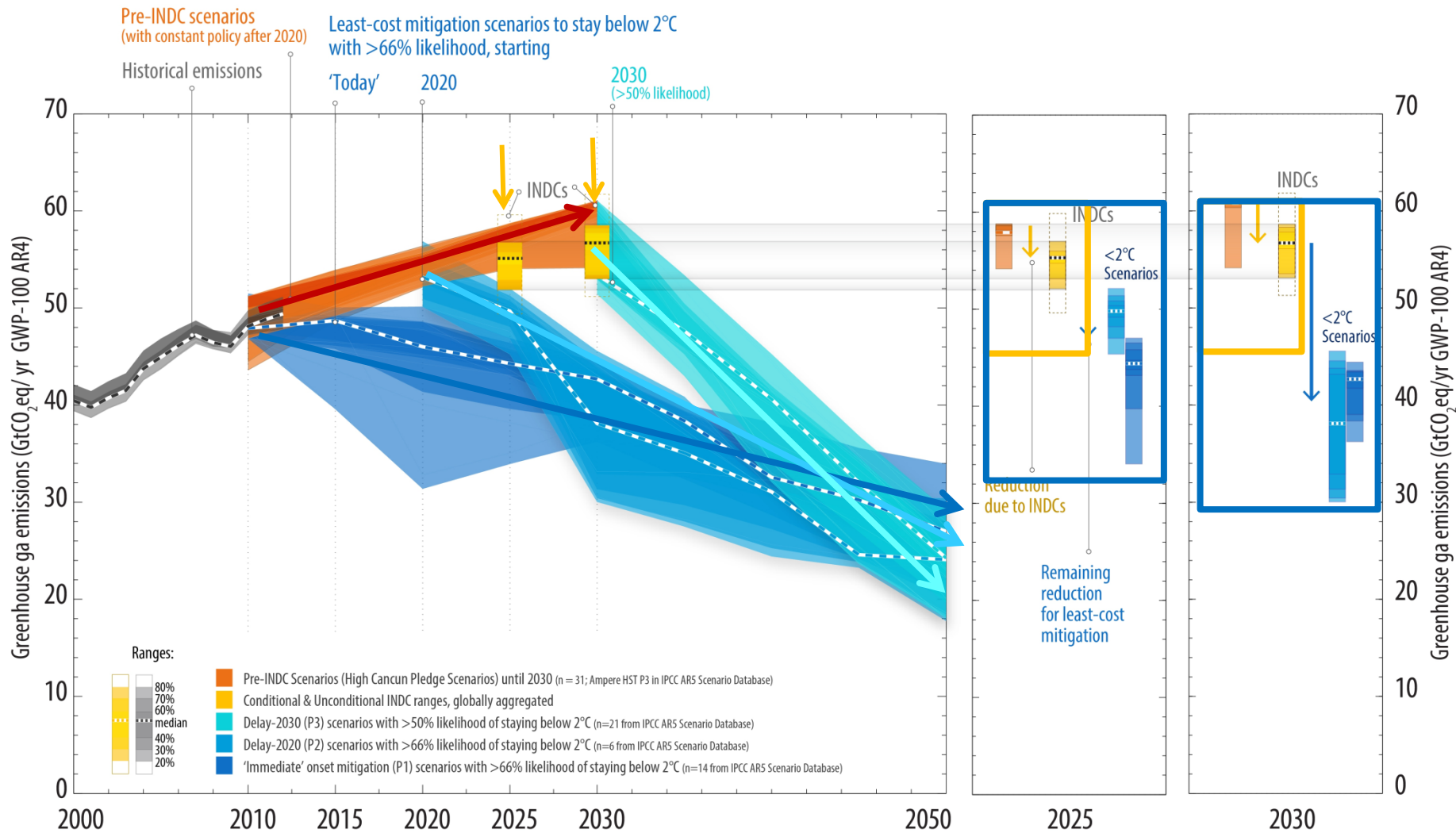
PARIS 2015

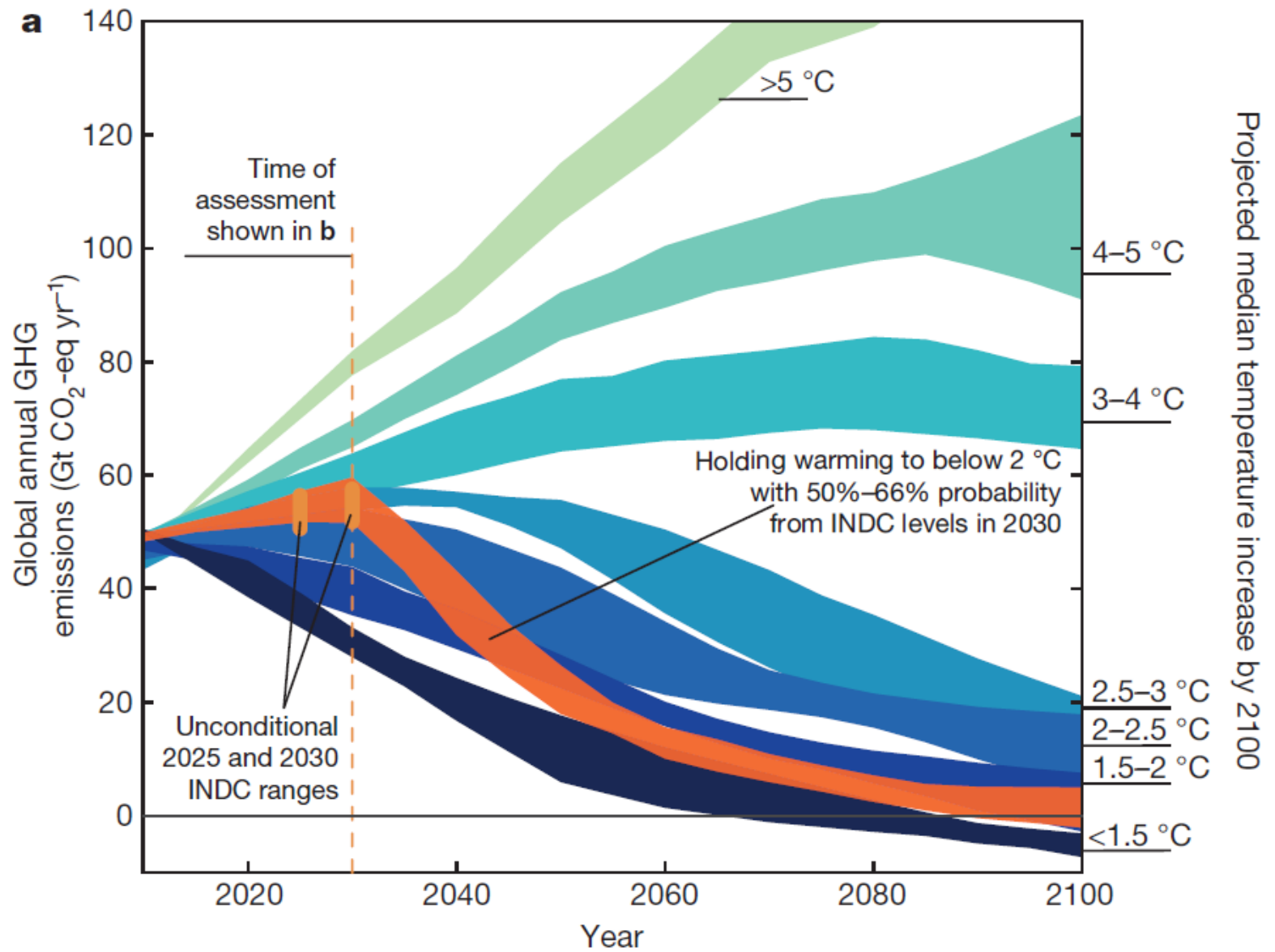
UN CLIMATE CHANGE CONFERENCE

Puntos básicos del acuerdo

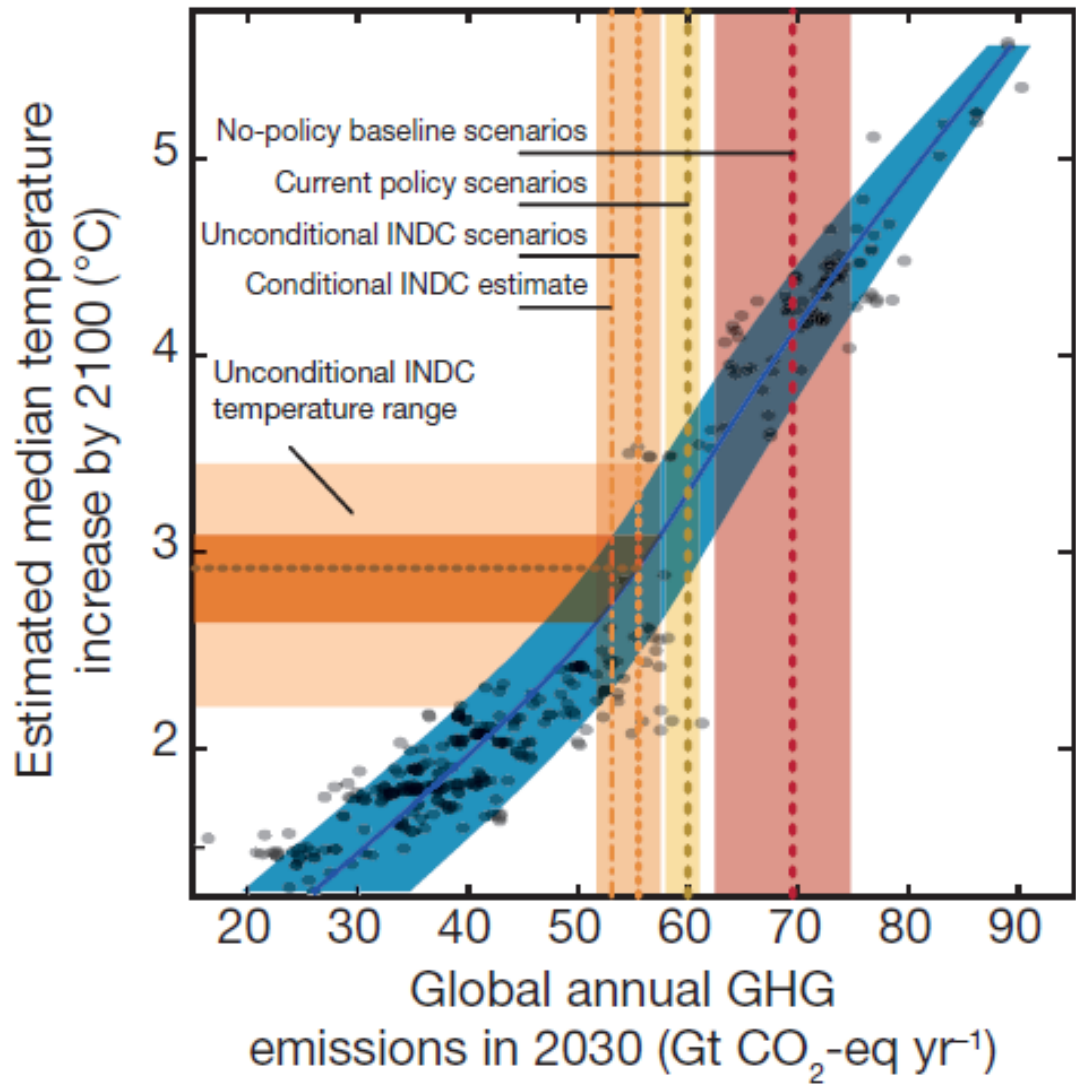
- Meta: evitar un calentamiento superior a 2°C y, a poder ser, mucho menos
- Compromisos voluntarios INDCs
- Revisión periódica para ajustar incrementando la ambición
- Todos los países están implicados

Compromisos antes de París





b



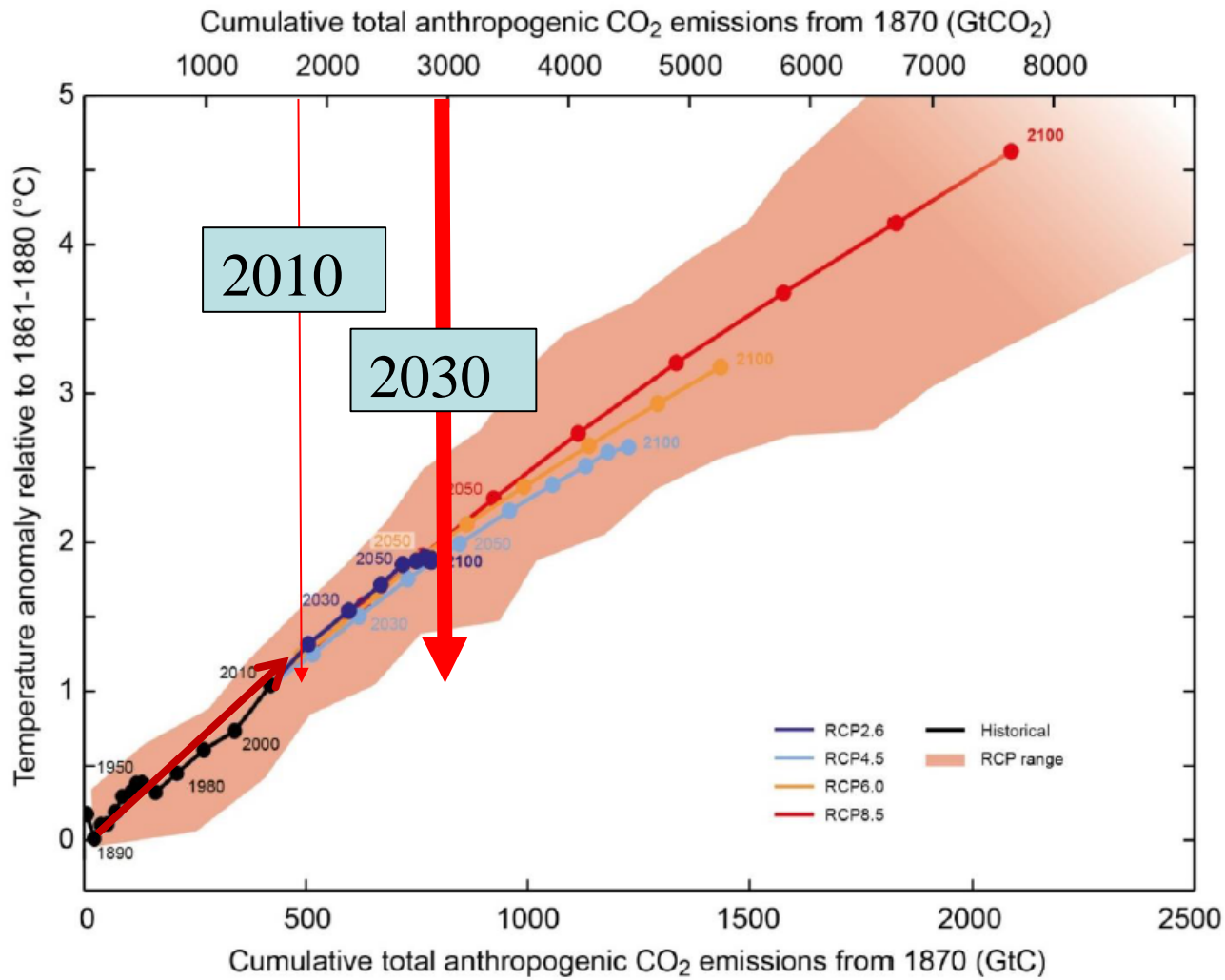
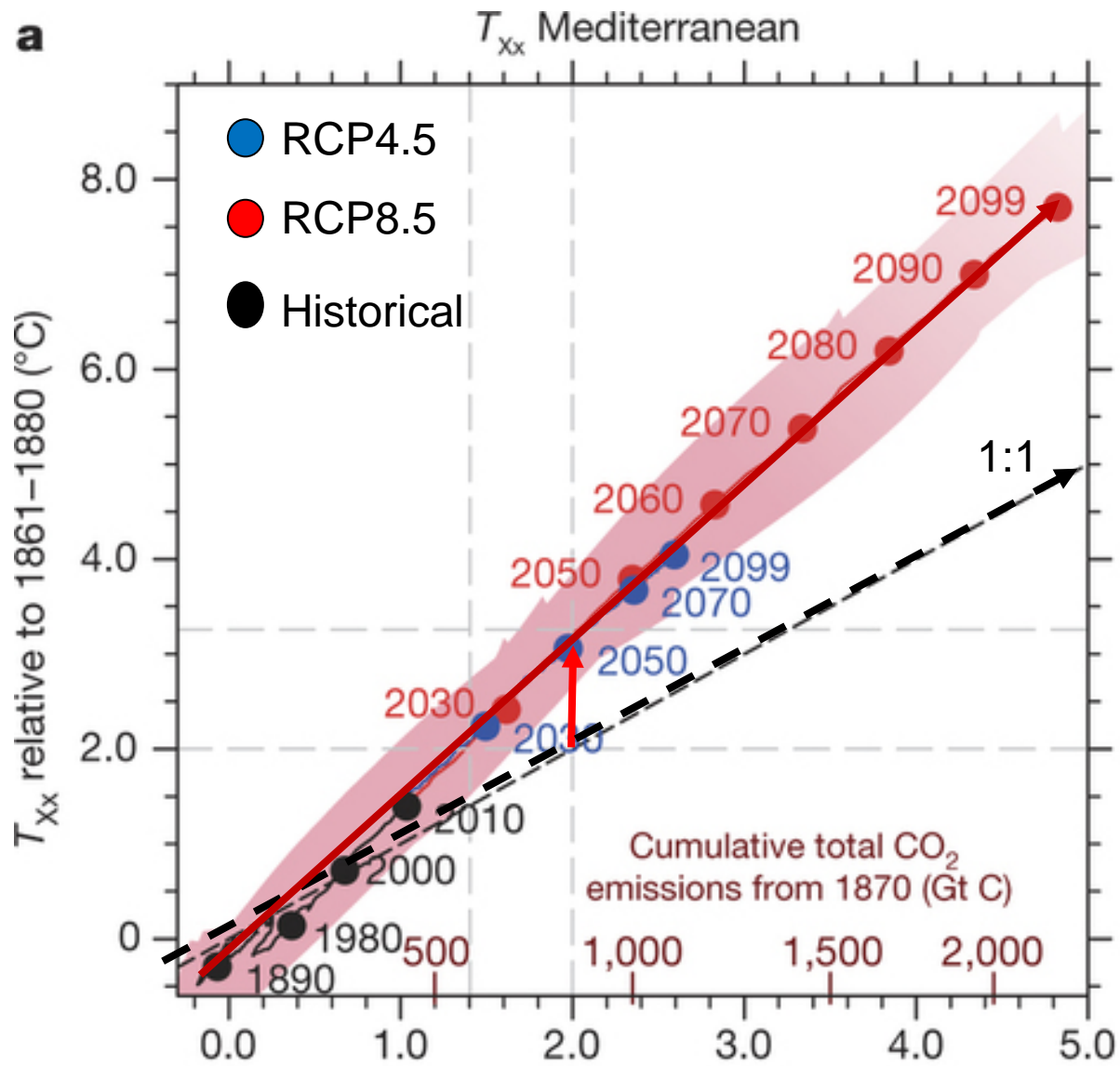


Fig. SPM.10



Mensajes finales

- La adaptación es obligada
- El tiempo apremia
- Es cosa de todos
- Precisa planes y recursos
- Evitar la maldaptación
- Exige coordinación
- Es un reto, pero ofrece posibilidades y cobeneficios

