

UNIVERSITY OF COPENHAGEN



The International Scientific Congress on Climate Change

# CLIMATE CHANGE

Global Risks, Challenges & Decisions

## COPENHAGEN 2009

10-12 March

[www.climatecongress.ku.dk](http://www.climatecongress.ku.dk)



INTERNATIONAL ALLIANCE OF  
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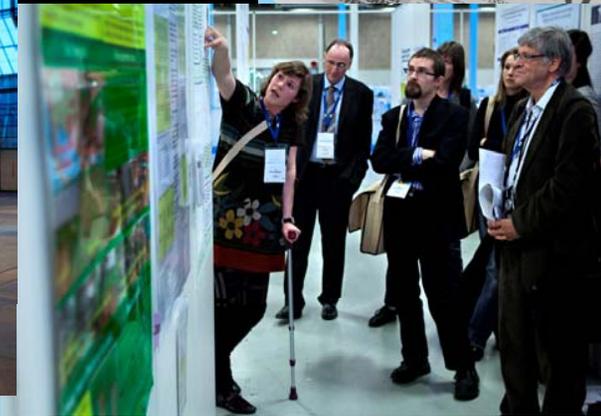
Confederation of Danish Industry



# CLIMATE CHANGE COPENHAGEN 2009

## CLIMATE CHANGE Global Risks, Challenges & Decisions

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## The Congress & Some Statistics...

- More than 2500 participants
- More than 300 volunteers
- 58 parallel sessions
- More than 1600 scientific contributions
- Participants from nearly 80 countries
- 215 journalists
- 1800+ articles online in more than 40 countries

**Synthesis (Peer reviewed)**  
**June 2009 – 30 pages**  
**written for the non-**  
**scientist**

**Book (Cambridge**  
**University Press, 250**  
**pages 2010)**





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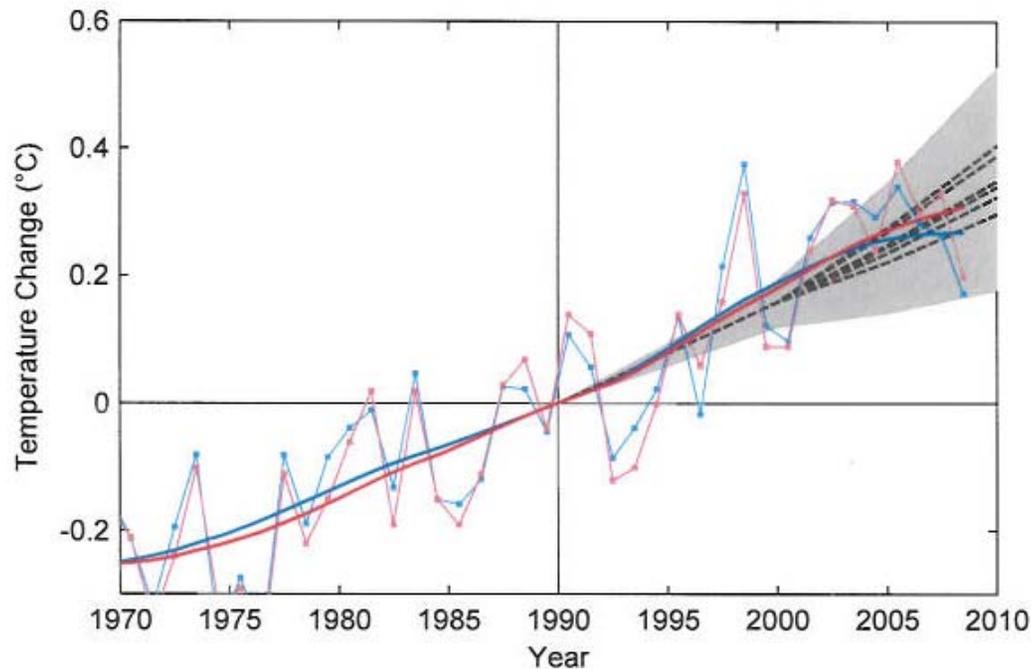


## KEY MESSAGE 1: CLIMATIC TRENDS

- ***Recent observations show that greenhouse gas emissions and many aspects of the climate are changing near the upper boundary of the IPCC range of projections.***
- ***Many key climate indicators are already moving beyond the patterns of natural variability within which contemporary society and economy have developed and thrived. These indicators include global mean surface temperature, sea-level rise, global ocean temperature, Arctic sea ice extent, ocean acidification, and extreme climatic events.***
- ***With unabated emissions, many trends in climate will likely accelerate, leading to an increasing risk of abrupt or irreversible***

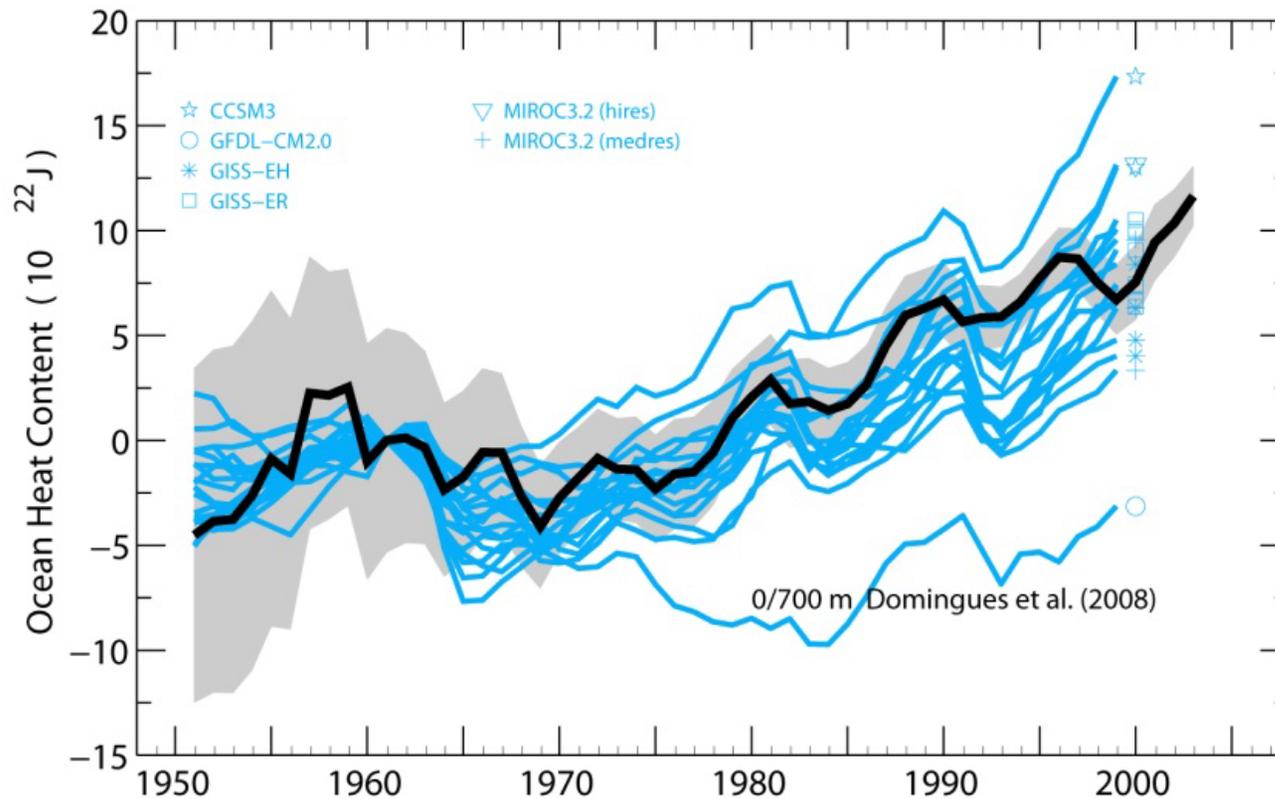


# AIR TEMPERATURE CHANGE



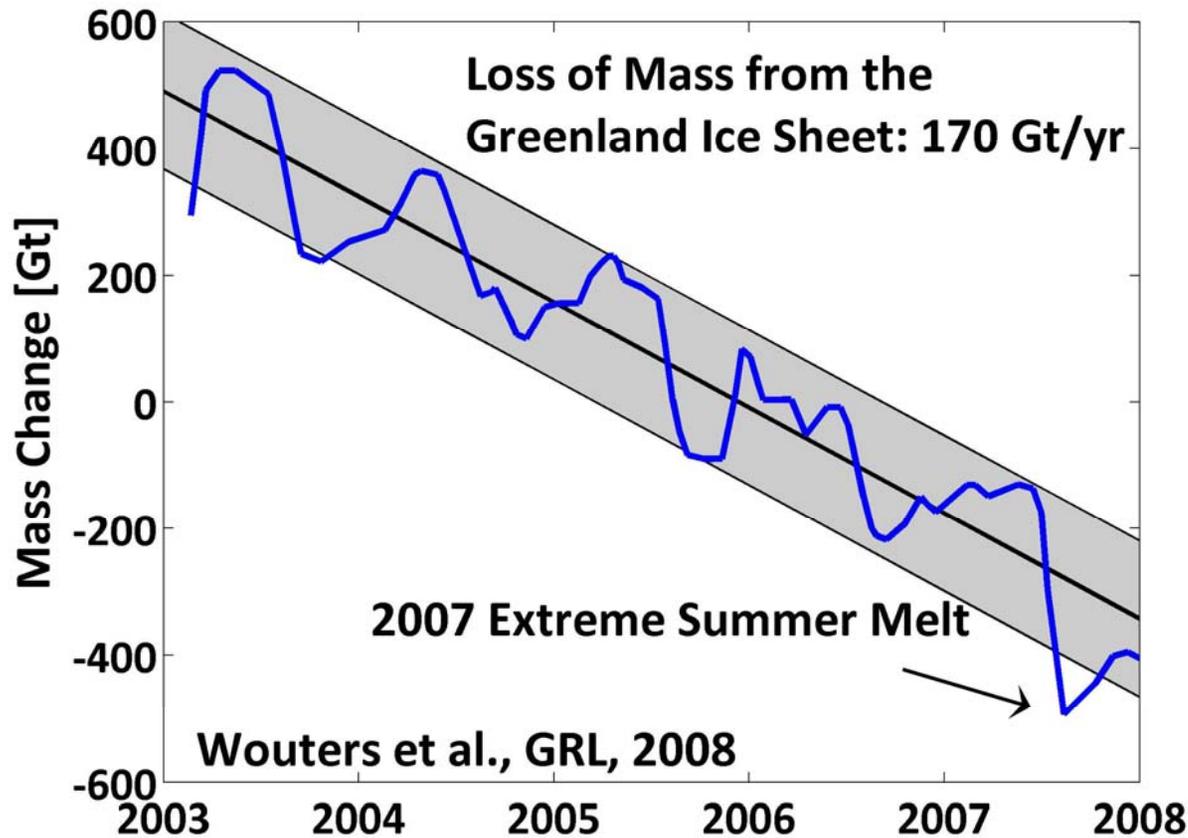
Changes in global average surface air temperature (smoothed over 11 years) relative to 1990. The blue line represents data from Hadley Center (UK Meteorological Office); the red line is GISS (NASA Goddard Institute for Space Studies, USA) data. The broken lines are projections from the IPCC Third Assessment Report, with the shading indicating the uncertainties around the projections (Rahmstorf et al. 2007 with data for 2007 and 2008 from S. Rahmstorf).

# Surface ocean temp rise

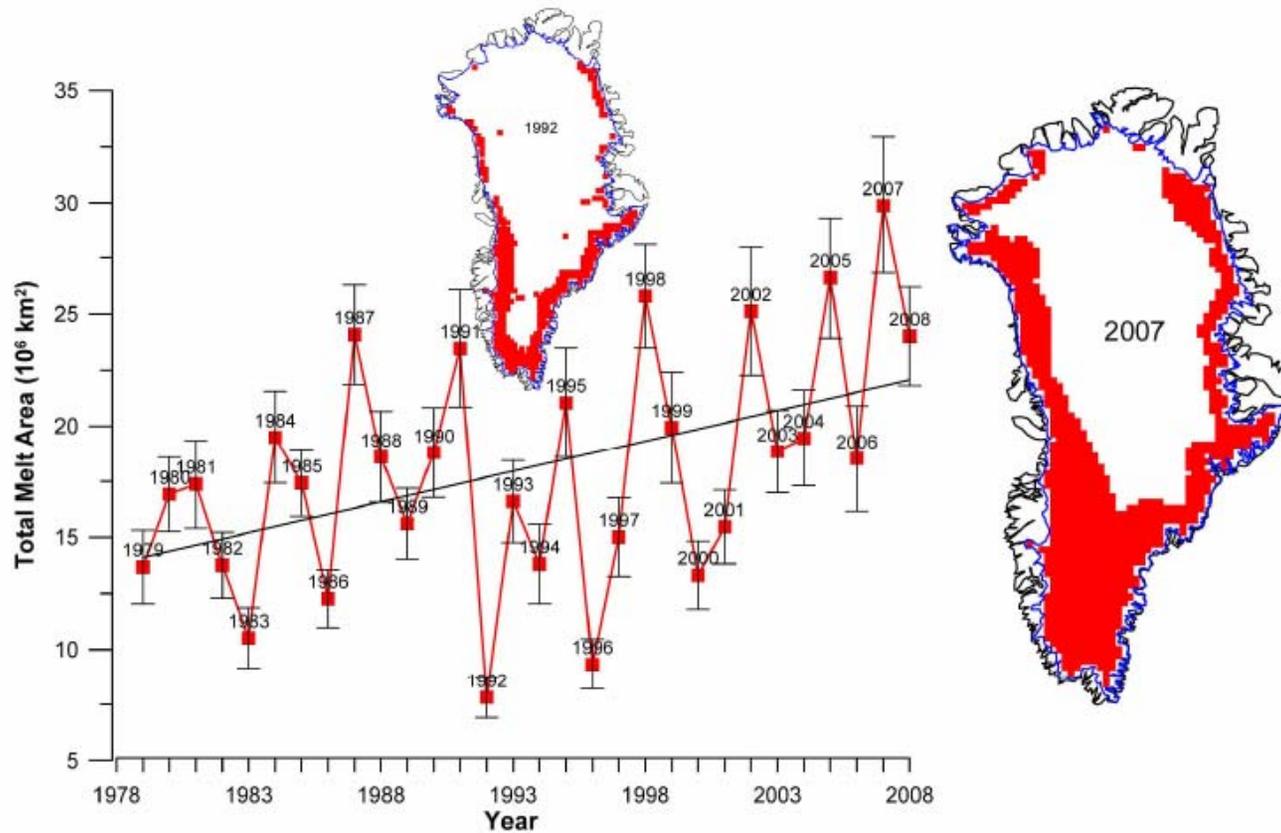




# Polar Ice sheets melting



Change in the mass of the Greenland ice sheet from 2003 to 2008, as estimated from satellite measurements of changes in the gravitational field. The grey shaded area shows the 90% confidence level of the fitted straight line. The vertical axis is set to an arbitrary value of zero at the beginning of the observational period.

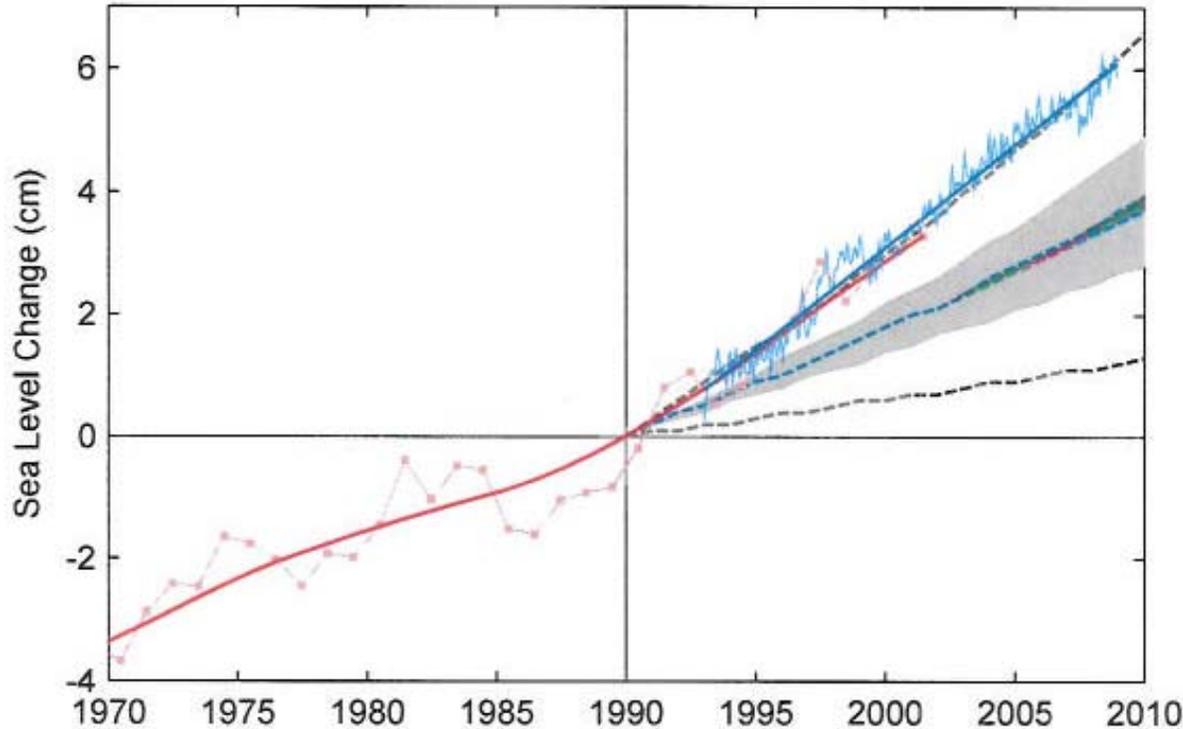


*Konrad Steffen and Russell Huff, CIRES, University of Colorado at Boulder*

Area of surface melting across the Greenland Ice Sheet, as inferred from satellite observations of the surface temperature.



# Sea-level rising



**Rise of  
approx. 1 m  
or more  
likely by  
2100**

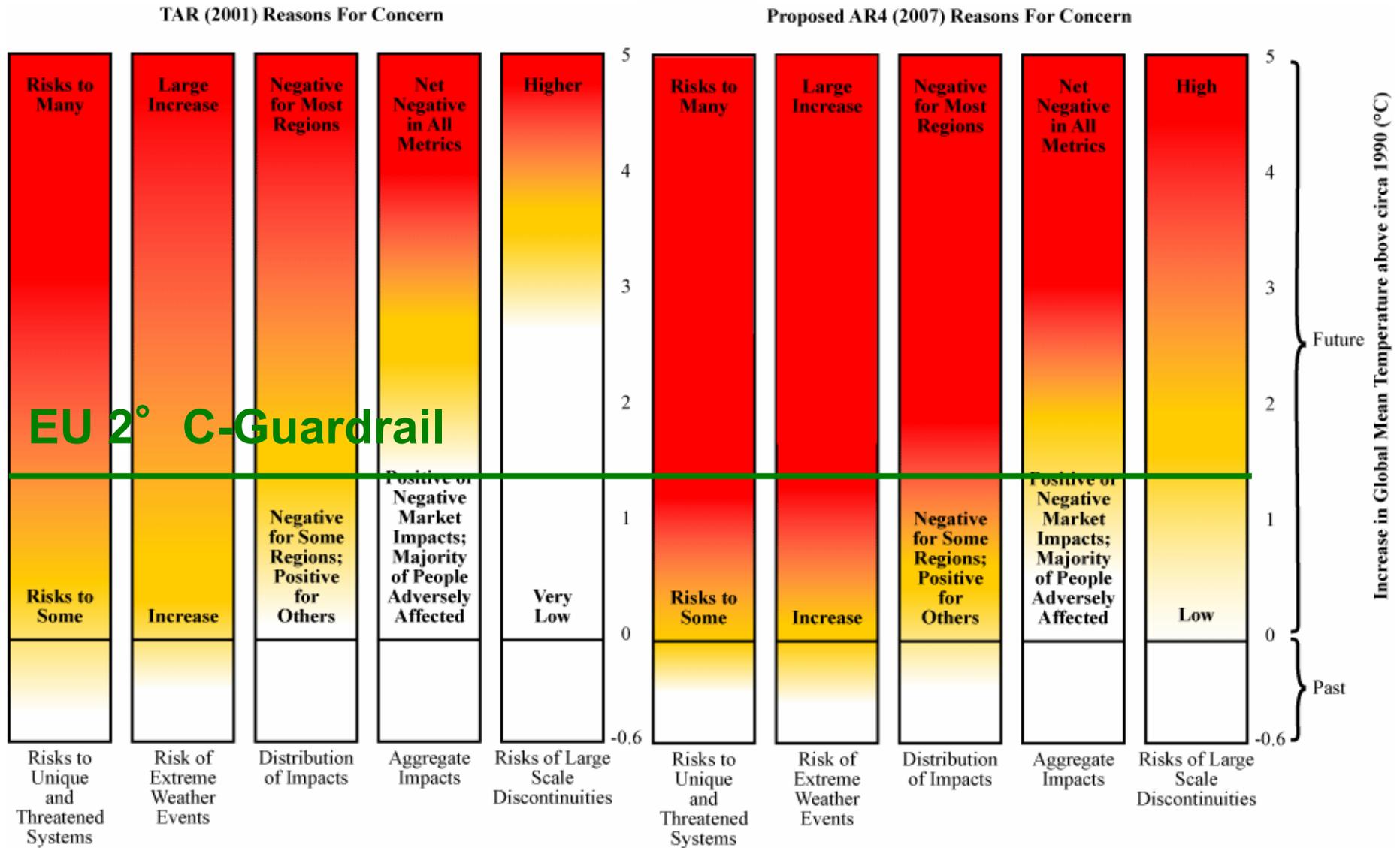
Change in sea level from 1970 to 2008, relative to the sea level at 1990. The solid lines are based on observations. The envelope of IPCC projections is shown for comparison; broken lines are individual projections; shading is the uncertainty around the projections. After Rahmstorf et al. 2007, based on data from Cazenave and Narnem (2004); Cazenave (2006) and A. Cazenave for 2006-2008 data.



## KEY MESSAGE 2: SOCIAL and ENVIRONMENTAL DISRUPTION

- ***The research community provides much information to support discussions on “dangerous climate change”.***
- ***Recent observations show that societies and ecosystems are highly vulnerable to even modest levels of climate change, with poor nations and communities, ecosystem services and biodiversity particularly at risk.***
- ***Temperature rises above 2°C will be difficult for contemporary societies to cope with, and are likely to cause major societal and environmental disruptions through the rest of the century and beyond.***

# Updated Reasons for Concern





- **Key message 3: Long-term strategy: Global Targets and Timetables**
- **Key Message 4: Equity Dimensions**
- **Key Message 5: Inaction is inexcusable**
- **Key Message 6: Meeting the Challenge**



Synthesis report from mid-June at  
[www.climatecongress.ku.dk](http://www.climatecongress.ku.dk)

