POLITECNICO DI MILANO

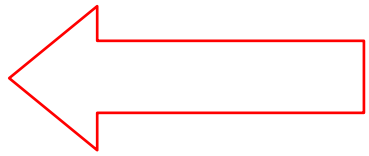


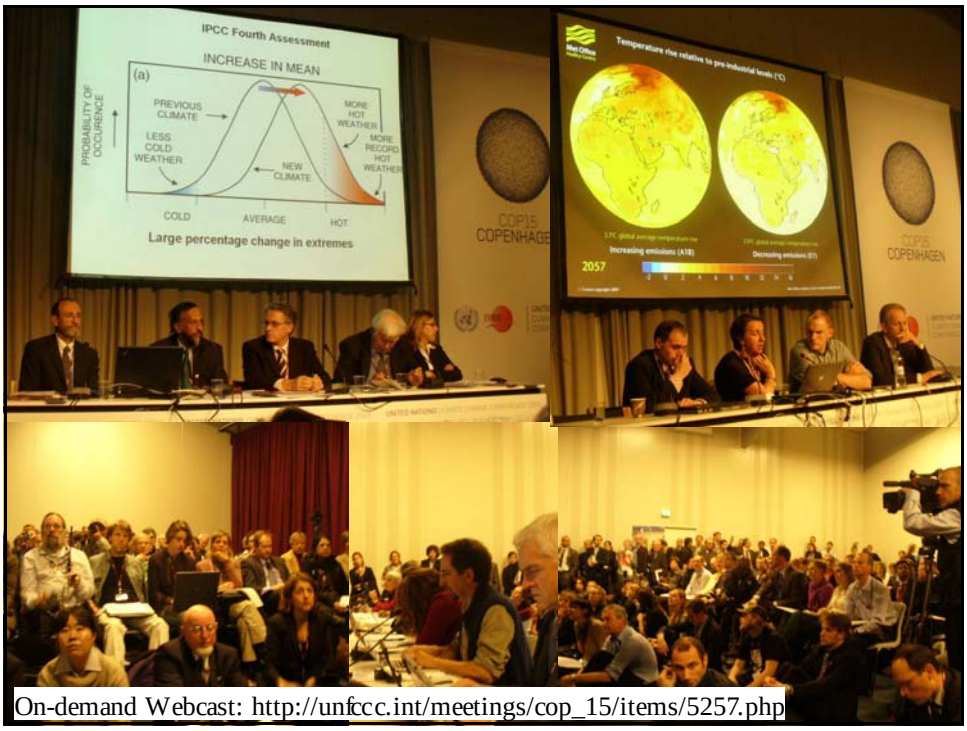
La conferenza di Copenhagen e il futuro delle politiche climatiche

Stefano Caserini
DIIAR - Sez. Ambientale

Attività alla COP

- Negoziazioni – plenaria
- Negoziazioni - Gruppo ad hoc sull'azione di cooperazione di lungo periodo della Convenzione (AWG-LCA)
- Negoziazioni - Gruppo ad hoc sugli ulteriori impegni per i Paesi dell'Allegato I del Protocollo di Kyoto (AWG-KP).
- Negoziazioni – gruppi di lavoro
- Conferenze stampa
- "Side event" sui diversi aspetti:
  - conoscenza scientifica
  - adattamento
  - politiche di mitigazione
- Exibition e Padiglioni nazionali





The Copenhagen Diagnosis

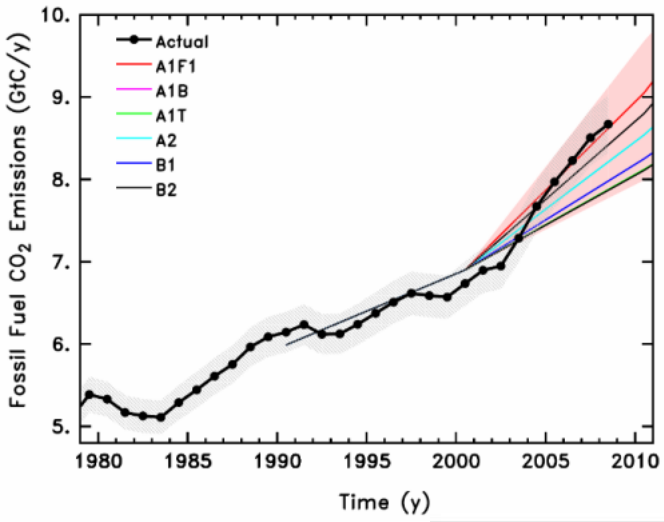
Updating the World on the Latest Climate Science

The Copenhagen Diagnosis, 2009: Updating the World on the Latest Climate Science.

Ian Allison, Nathan Bindoff, Robert Bindschadler, Peter Cox, Nathalie de Noblet-Ducoudre , Matthew England, Jane Francis, Nicolas Gruber, Alan Haywood , David Karoly , Georg Kaser, Corinne Le Quéré, Tim Lenton, Michael Mann, Ben McNeil, Andy Pitman, Stefan Rahmstorf , Eric Rignot, Hans Joachim Schellnhuber, Stephen Schneider, Steven Sherwood, Richard Somerville, Konrad Steffen, Eric Steig, Martin Visbeck, Andrew Weaver.

http://www.copenhagendiagnosis.com/

Figure 1: Global CO_2 Emissions from Fossil Fuels

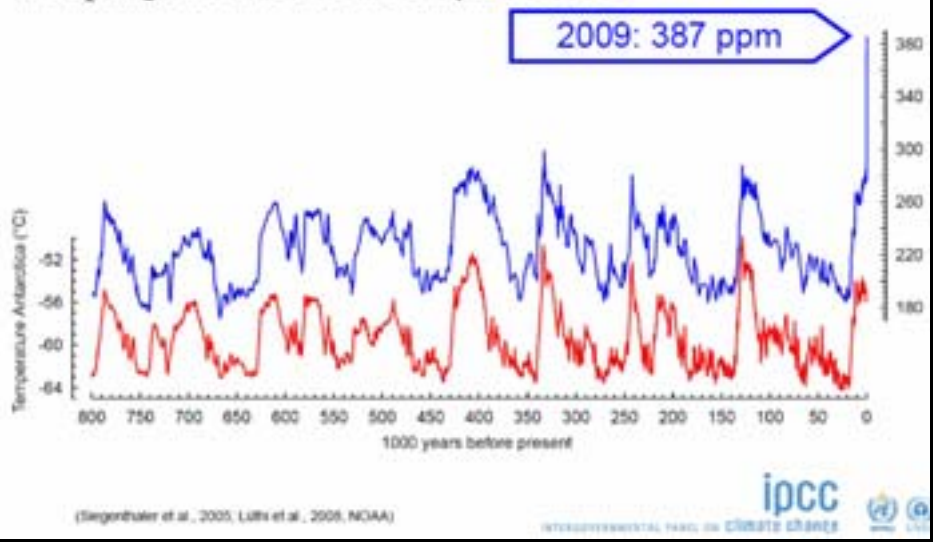


Emissioni 2009: - 3 % ?

The Copenhagen Diagnosis
Updating the World on the Latest Climate Science

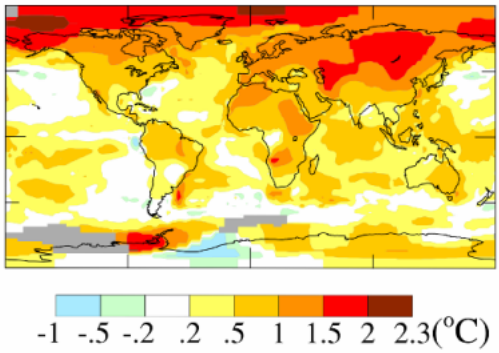
The Physical Science Basis: Latest Findings to be Assessed by WGI in AR5

1. CO_2: Higher levels and more rapid increase



(Siegenthaler et al., 2005; Lüthi et al., 2008; NOAA)

ipcc



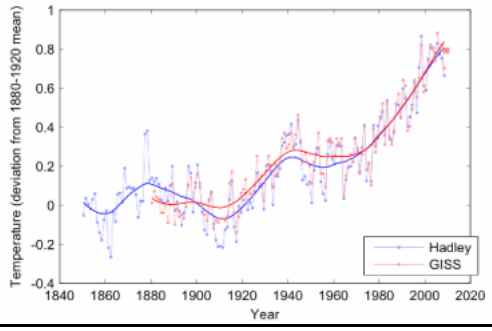


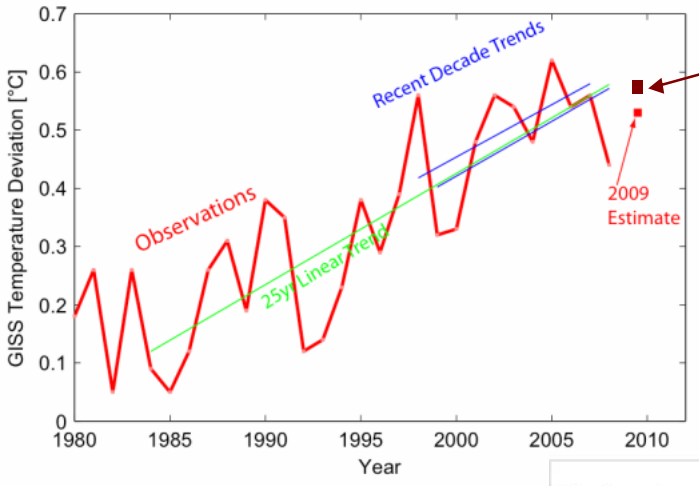
Figure 3:

(Top) Mean temperature change between 1950's and 2000's:

(Bottom) Global average temperature change from 1850

The Copenhagen Diagnosis
Updating the World on the Latest Climate Science

Figure 4: Global Temperature Change since 1980 from GISS data

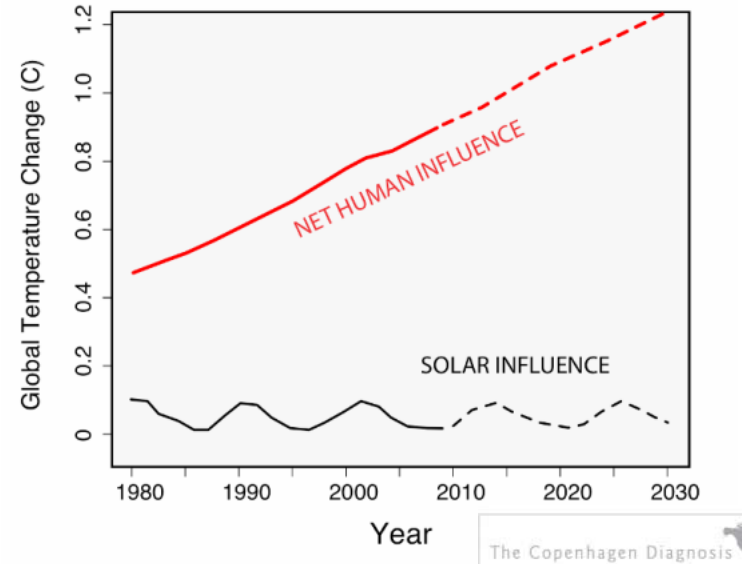


2009 - Finale Secondo anno più caldo nella serie di dati misurati

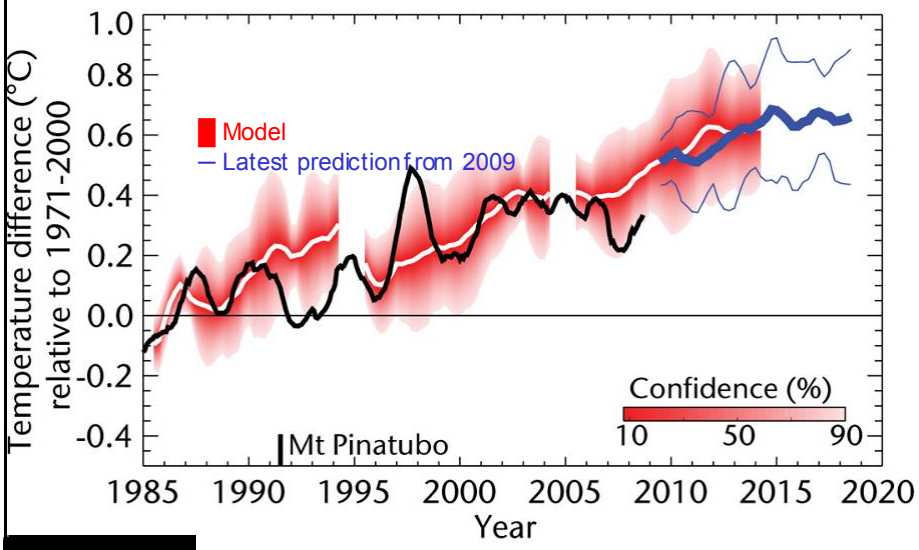
Decennio più caldo nella serie dei dati misurati

The Copenhagen Diagnosis
Updating the World on the Latest Climate Science

Figure 5: Human versus Solar influence since 1980 and projections to 2030

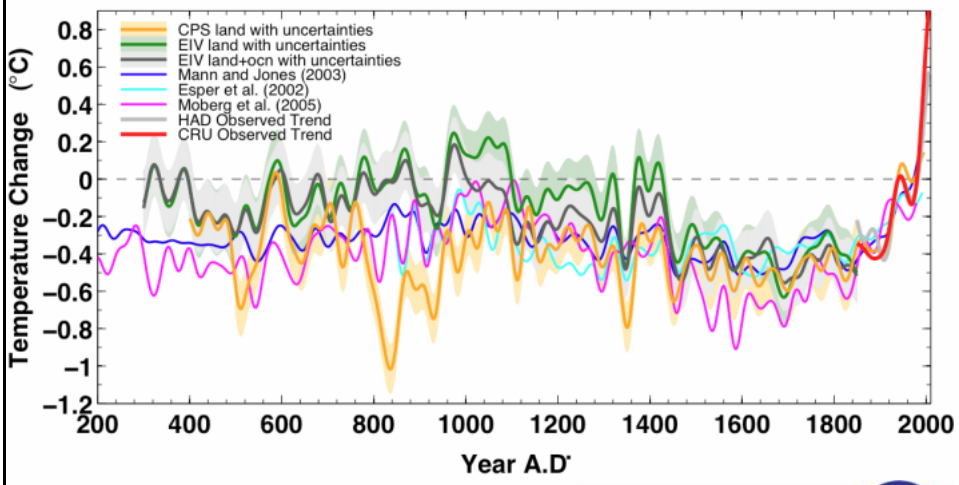


Global average temperature forecast for the next decade



11

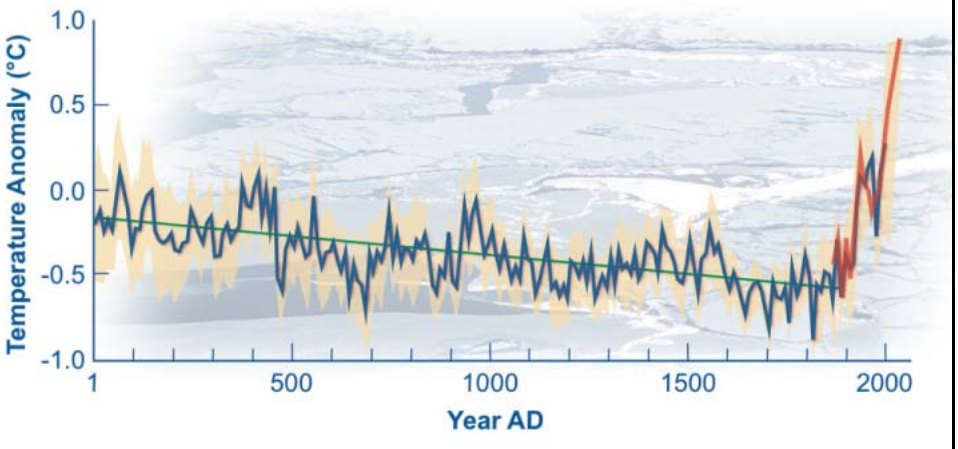
Figure 19: Northern Hemisphere reconstructed temperature change since 200AD



The Copenhagen Diagnosis
Updating the World on the Latest Climate Science

12

Figure 20: Arctic air temperature change reconstructed (blue), observed (red)



Fonte: Kaufman D.S. et al. (2009) Recent warming reverses long-term arctic cooling. Science, 325, 1236-1239.

The Copenhagen Diagnosis
Updating the World on the Latest Climate Science

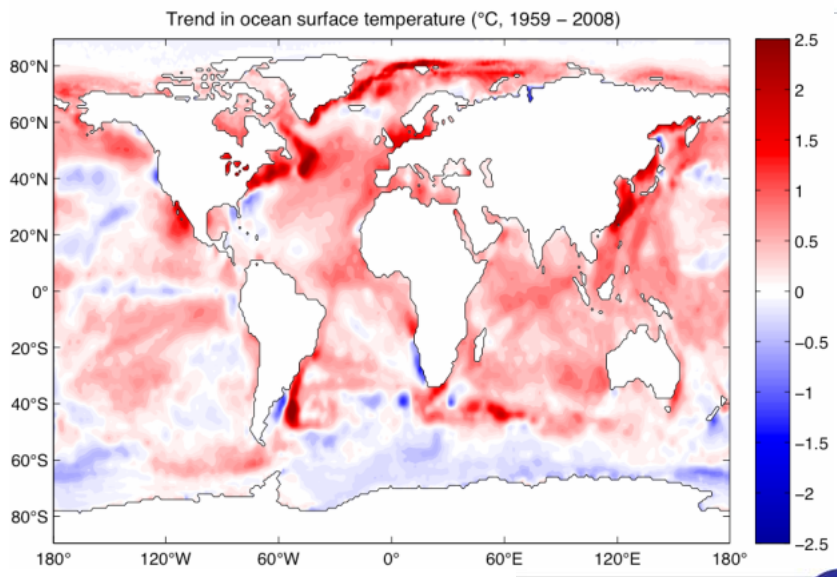
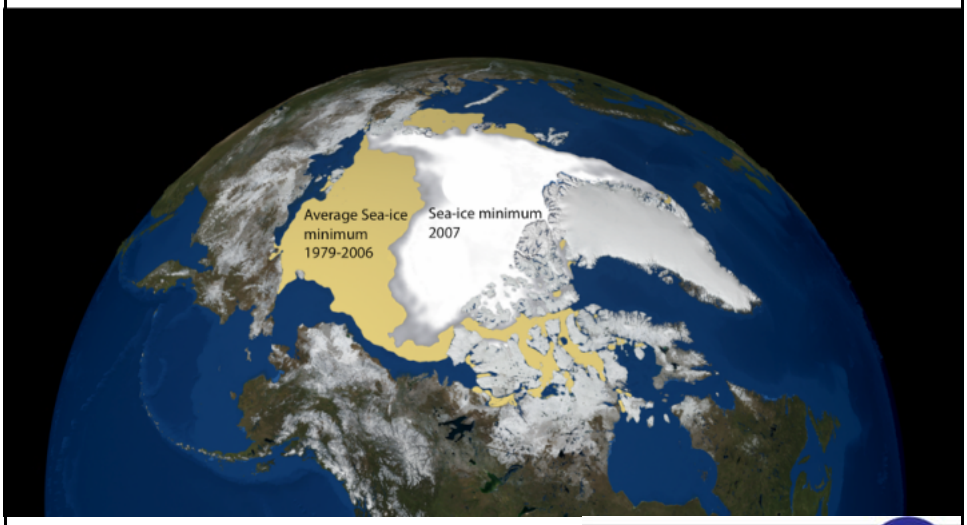
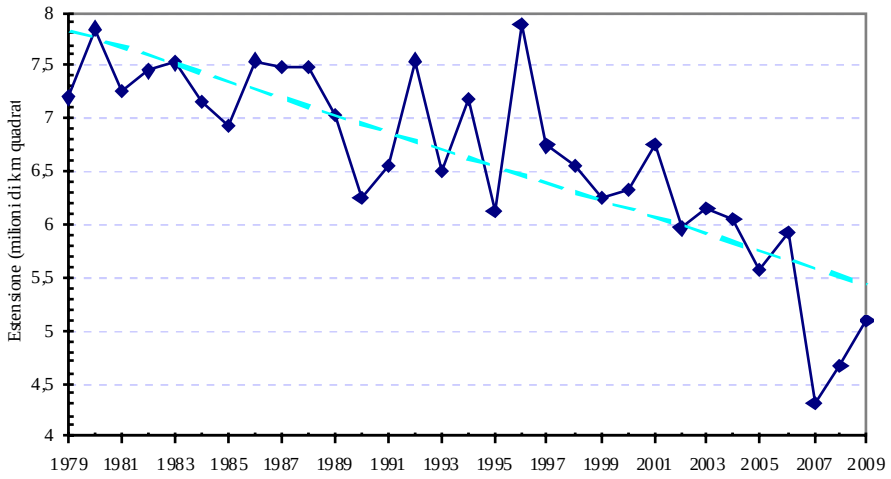


Figure 15

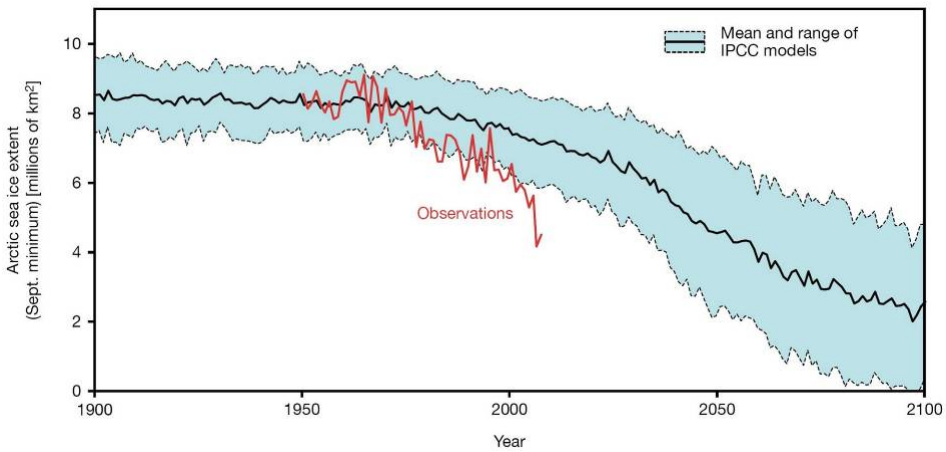
Figure 12: Minimum arctic sea-ice extent from 1979 to 2007





Estensione della banchisa glaciale artica in settembre nel periodo 1979-2009
(Fonte dati: NSIDC, 2007)

Figure 13: Observed and modeled Arctic sea-ice extent



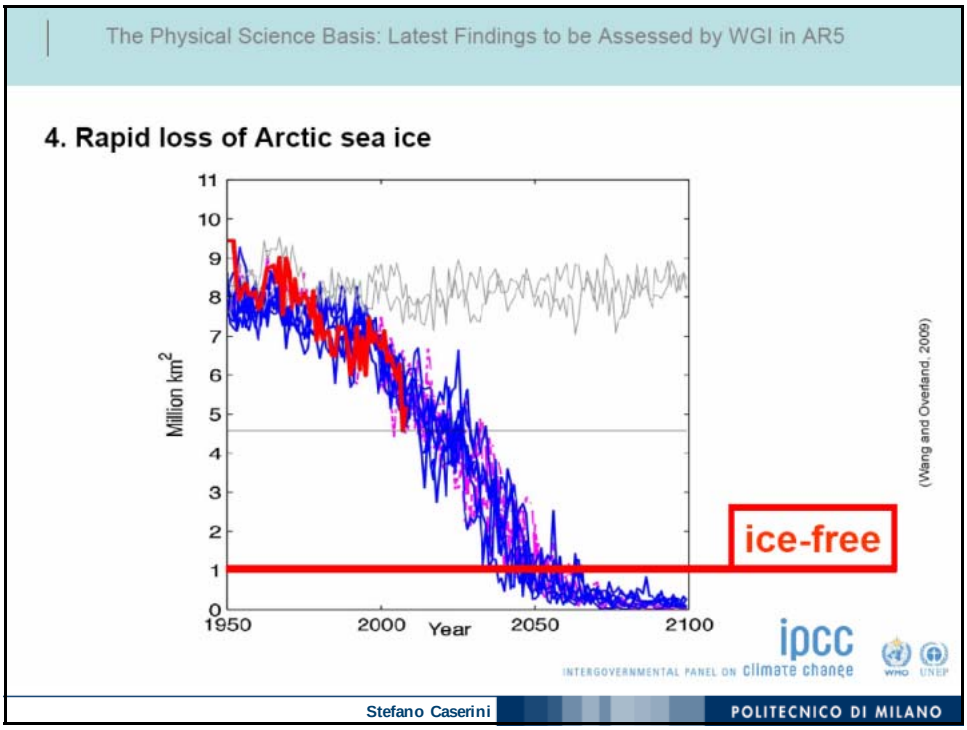
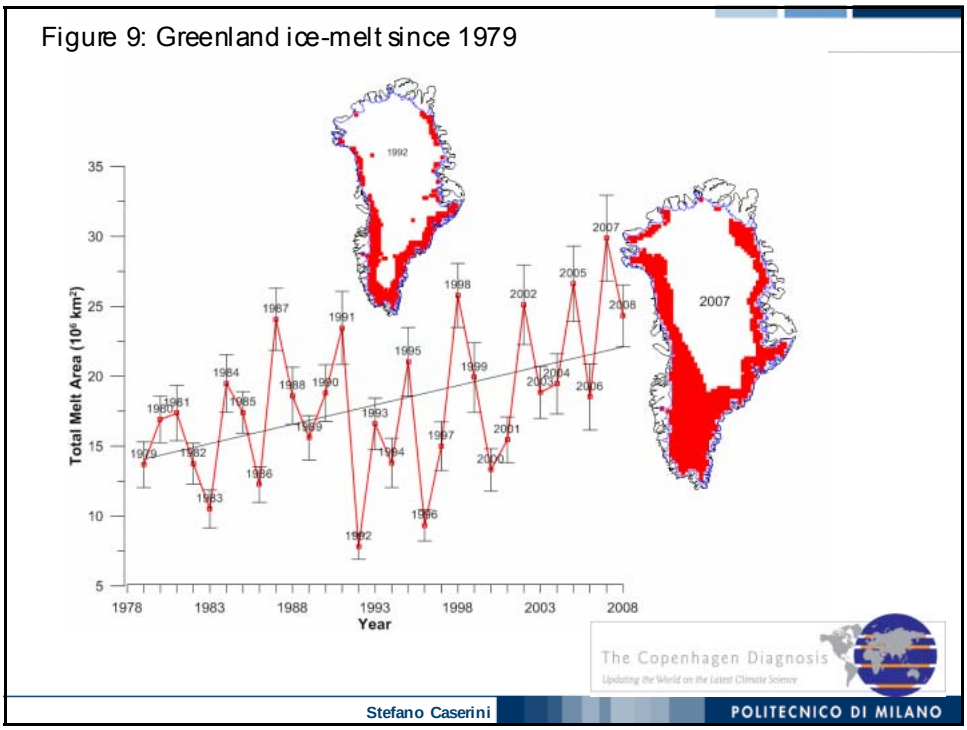
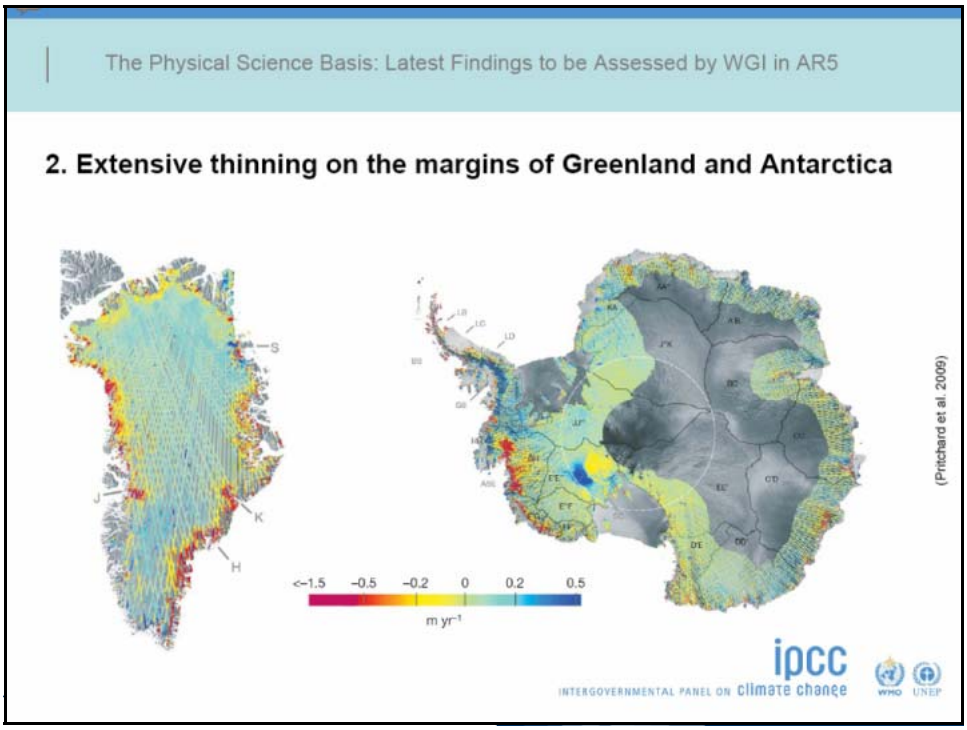


Figure 9: Greenland ice-melt since 1979





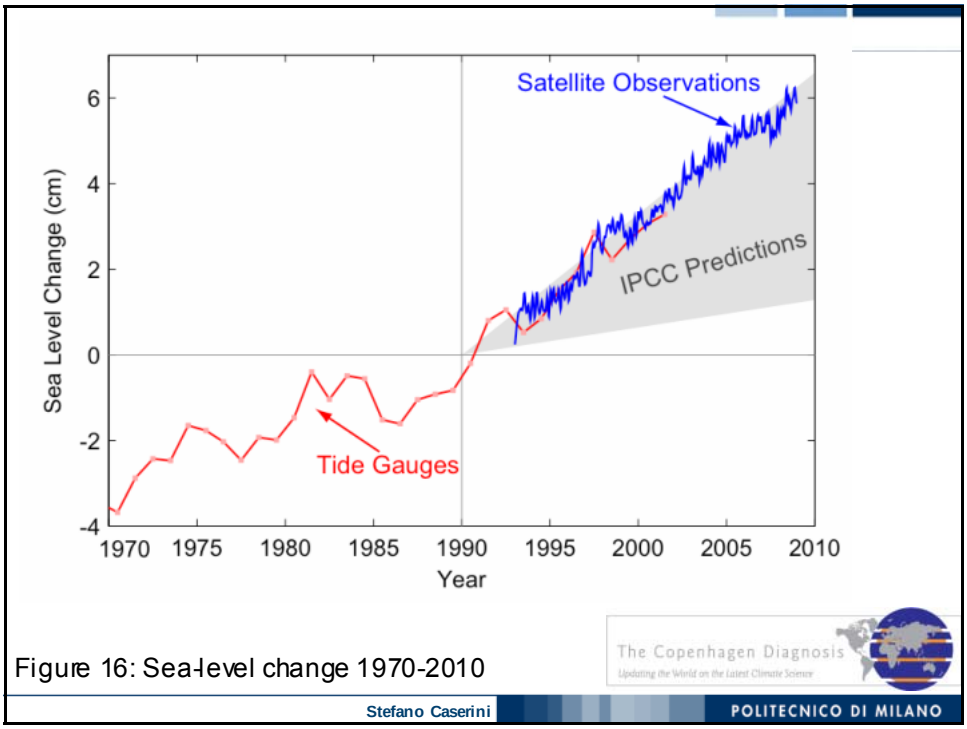
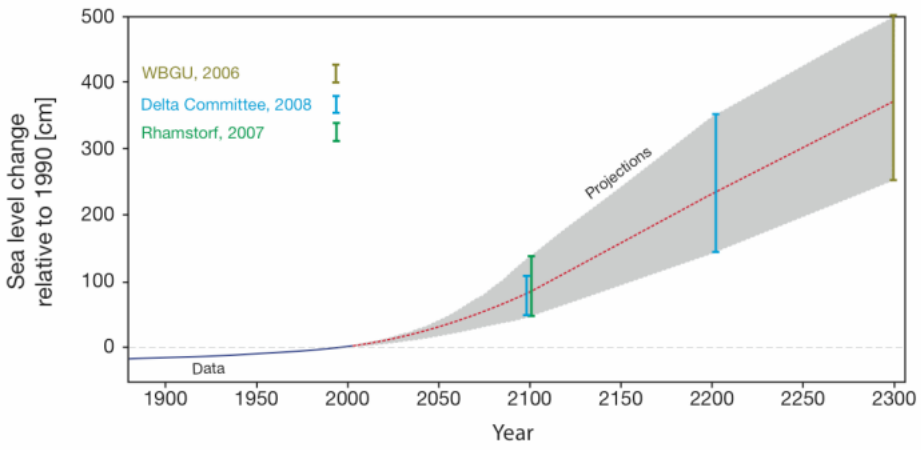


Figure 16: Sea-level change 1970-2010

Figure 17: Past and future sea-level projections



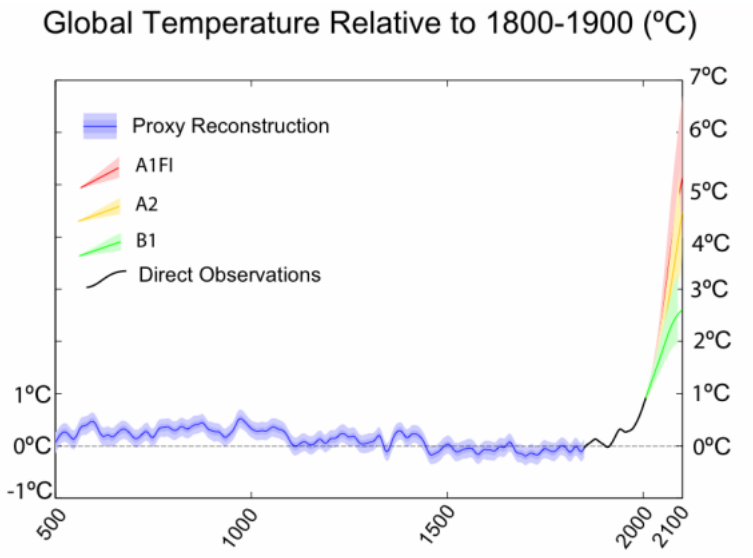


Figure 21: Reconstructed, observed and future warming projections

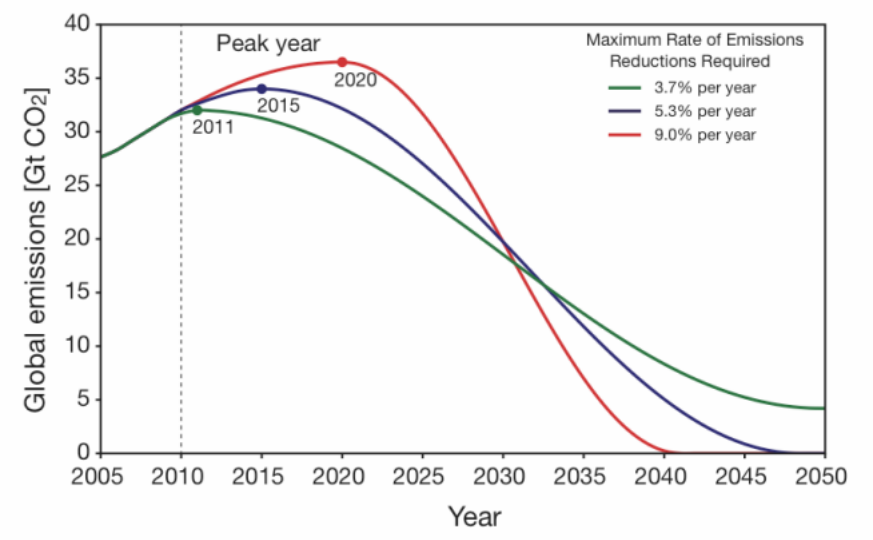
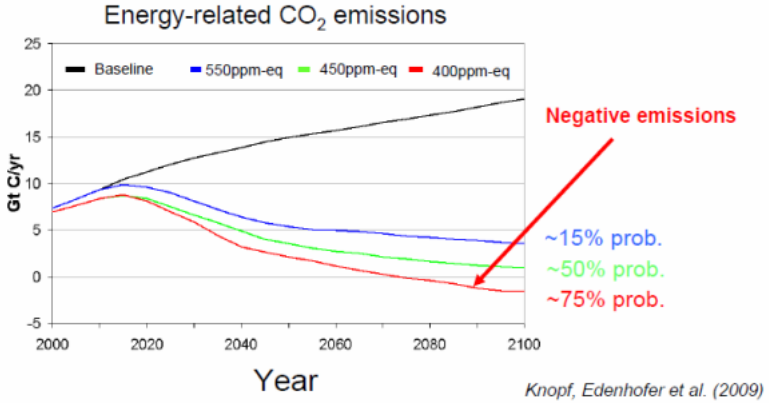


Figure 22: Emissions pathways to give 67% chance of limiting global warming to 2°C

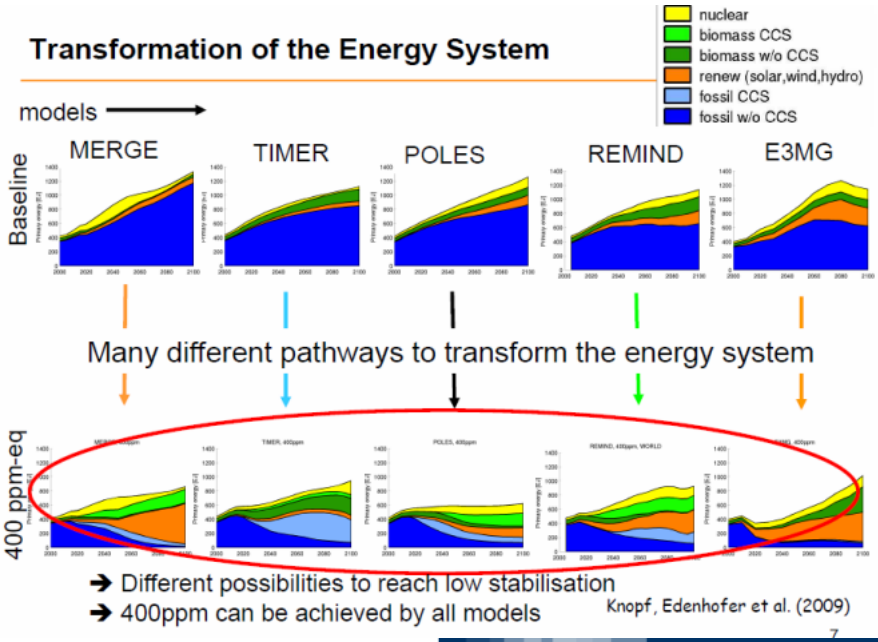
The Economics of Atmospheric Stabilisation

ADAM model comparison:
Analysis of 3 stabilisation targets with different probabilities to reach the 2°target: 550ppm-eq, 450ppm-eq, 400ppm-eq



Knopf, Edenhofer et al. (2009)

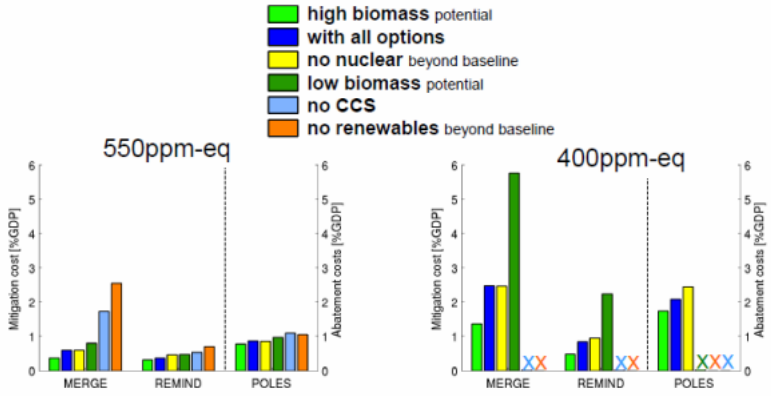
Transformation of the Energy System



➔ Different possibilities to reach low stabilisation
➔ 400ppm can be achieved by all models

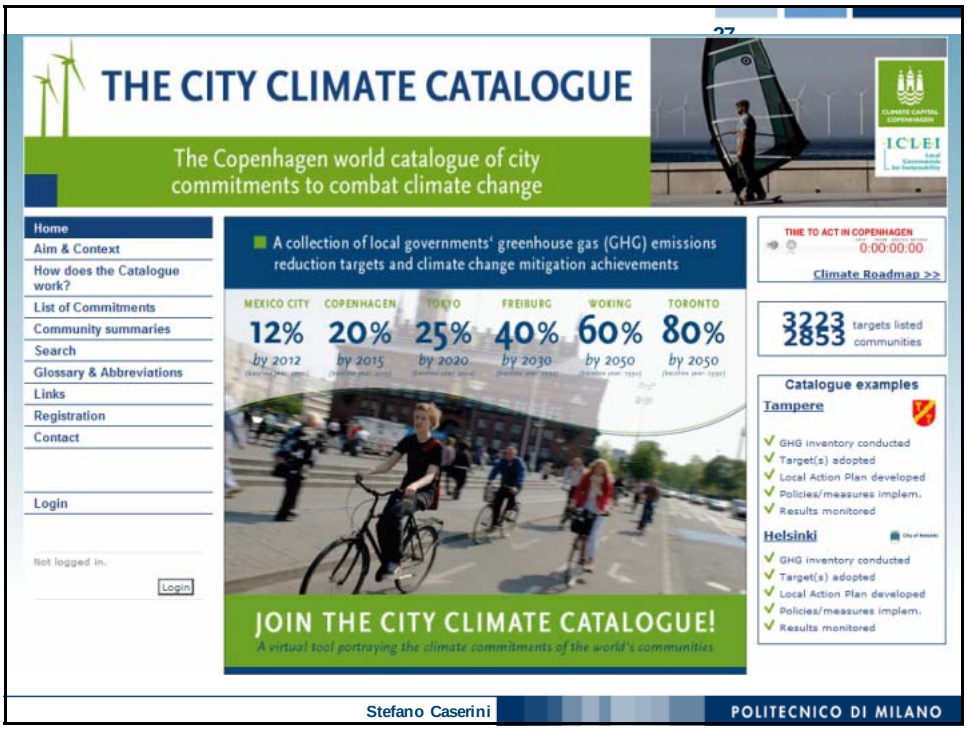
Knopf, Edenhofer et al. (2009)

Technology Options for Low Stabilisation



➔ Mitigation potential of nuclear is limited (but high use in the baseline)
➔ 400 ppm neither achievable without CCS nor without extension of renew
➔ Biomass potential dominates the mitigation costs of low stabilisation

Knopf, Edenhofer et al. (2009)



China Side Event at COP 15 Liva Weel, Bella Centre, 10 December 2009

CARBON EQUITY

Perspectives from Chinese Academic Community

Speakers and Discussants

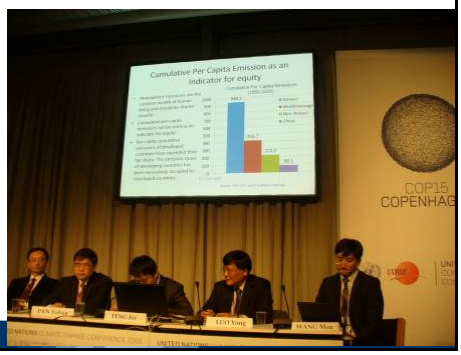
no politicians, no diplomats, purely academic, politically indifferent scholars

Speakers

- Luo Yong, Scientific, National Climate Centre
- Teng Fei, Conceptual, Tsinghua University
- Ye Qian, Numerical, Chinese Academy of Sciences
- Wang Mou, Institutional, Chinese Academy of Social Sciences
- Zhang Yongsheng, Comparative, Development Research Centre of the State Council

Discussants

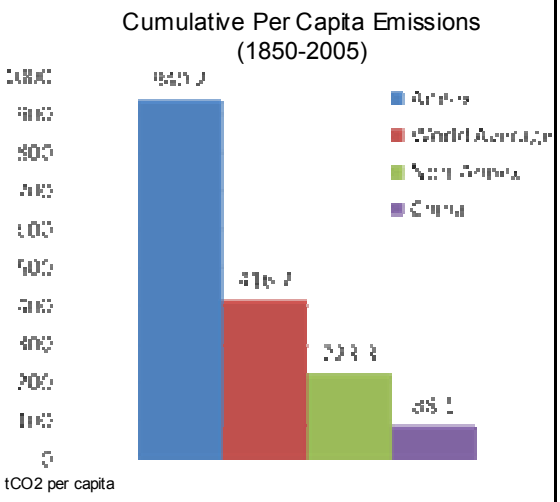
- Jean-Pascal van Ypersele, IPCC Vice Chair, Belgium
- Anil Markandya, Bath University



Stefano Caserini

Cumulative Per Capita Emission as an Indicator for equity

- Atmospheric resources are the common wealth of human being and should be shared equally.
- Cumulative per capita emissions can be used as an indicator for equity.
- Per capita cumulative emissions of developed countries have exceeded their fair share. The emission space of developing countries has been excessively occupied by developed countries.



Source: WRI CAIT and Tsinghua University






THERE
IS NO
PLANET B


il Giornale

MEZZA ITALIA AL GELO

Ecco il pianeta surriscaldato

LA BALLA SPAZIALE

Il Giornale, 8/1/2009


il Giornale

NEVE E GELO BLOCCANO L'ITALIA

E lo chiamano surriscaldamento del pianeta

Il Giornale, 23/12/2009


ATTUALITÀ

I ghiacci dell'Himalaya e la previsione sbagliata

I misteri del clima pazzo ora i ghiacci dell'Himalaya non si sciolgono più

L'Onu ammette: le previsioni erano esagerate

La Repubblica, 21/1/10

AR4, WG2, cap. 10, pag. 492

10.6 Case studies

10.6.1 Megadeltas in Asia

There are 11 megadeltas with an area greater than 10,000 km² (Table 10.10) in the coastal zone of Asia that are continuously being formed by rivers originating from the Tibetan Plateau (Milliman and Meade, 1983; Penland and Kulp, 2005) These megadeltas are vital to Asia because these are home to millions of people, especially the seven megacities that are located in these deltas (Nicholls, 1995; Woodroffe et al., 2006). The megadeltas, particularly the Zhujiang delta, Changjiang delta and Huanghe delta, are also economically important, accounting for a substantial proportion of China's total GDP (Niou, 2002; She, 2004). Ecologically, the Asian megadeltas are critical diverse ecosystems of unique assemblages of plants and animals located in different climatic regions (IUCN, 2003b; ACIA, 2005; Macintosh, 2005; Sanlaville and Prieur, 2005). However the megadeltas of Asia are vulnerable to climate change and sea-level rise that could increase the frequency and level of inundation of megadeltas due to storm surges and floods from river drainage (Nicholls, 2004; Woodroffe et al., 2006) putting communities, biodiversity and infrastructure at risk of being damaged. This impact could be more pronounced in megacities located in megadeltas where natural ground subsidence is enhanced by human activities, such as in Bangkok in the Chao Phraya delta, Shanghai in the Changjiang delta, Tianjin in the old Huanghe delta (Nguyen et al., 2000; Li et al., 2004a; Jiang, 2005; Li et al., 2005; Woodroffe et al., 2006). Climate change together with human activities could also enhance erosion that has, for example, caused the Lena delta to retreat at a rate of 3.6

structural with human and institutional capability building measures (Du and Zhang, 2000; Inam et al., 2003; Li et al., 2004b; Thanh et al., 2004; Saito, 2005; Wolanski, 2007; Woodroffe et al., 2006).

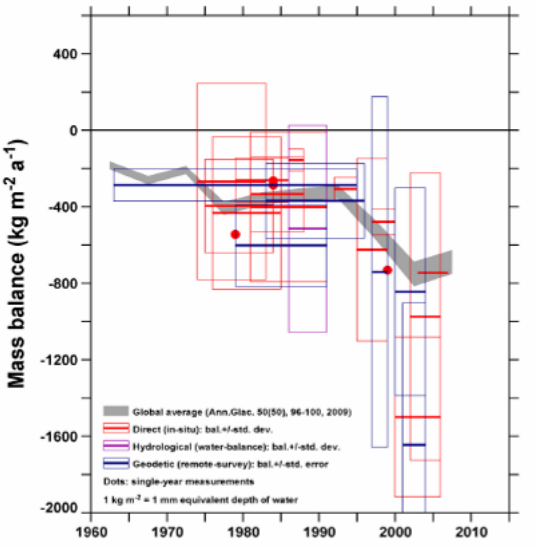
10.6.2 The Himalayan glaciers

Himalayan glaciers cover about three million hectares or 17% of the mountain area as compared to 2.2% in the Swiss Alps. They form the largest body of ice outside the polar caps and are the source of water for the innumerable rivers that flow across the Indo-Gangetic plains. Himalayan glacial snowfields store about 12,000 km³ of freshwater. About 15,000 Himalayan glaciers form a unique reservoir which supports perennial rivers such as the Indus, Ganga and Brahmaputra which, in turn, are the lifeline of millions of people in South Asian countries (Pakistan, Nepal, Bhutan, India and Bangladesh). The Gangetic basin alone is home to 500 million people, about 10% of the total human population in the region.

Glaciers in the Himalaya are receding faster than in any other part of the world (see Table 10.9) and, if the present rate continues, the likelihood of them disappearing by the year 2035 and perhaps sooner is very high if the Earth keeps warming at the current rate. Its total area will likely shrink from the present 500,000 to 100,000 km² by the year 2035 (WWF, 2005).

The receding and thinning of Himalayan glaciers can be attributed primarily to the global warming due to increase in anthropogenic emission of greenhouse gases. The relatively high population density near these glaciers and consequent deforestation and land-use changes have also adversely affected these glaciers. The 30.2 km long Gangotri glacier has been receding alarmingly in recent years (Figure 10.6). Between 1842 and 1935, the glacier was receding at an average of 7.3 m every

Mass balance of Himalayan glaciers



"*Global climate change is a huge factor in this region*".

"*Total Himalayan mass balance is distinctly negative; some anomalies may exist*"

Kargel S. et al (2009) Satellite-era glacier changes in High Asia. Fall AGU meeting, San Francisco, Dec. 14.

Battaglia anti Onu Scienziati di tutto il mondo chiedono le dimissioni del responsabile dell'Ipcc. Dopo la scoperta degli errori sui rapporti

Le bugie e i trucchi sul clima. «Cacciate il Nobel Pachauri»

DAL NOSTRO CORRISPONDENTE

BERLINO — L'onda sollevata dal flop della Conferenza di Copenaghen sui cambiamenti climatici, lo scorso dicembre, sta scavando. I primi a ricevere l'onda d'urto sono l'Ipcc — il Panel di scienziati che ha studiato l'effetto serra per conto dell'Onu — e il suo presidente, Rajendra Pachauri. Una serie di ricercatori che hanno lavorato per l'Ipcc ammette ormai che alcuni risultati pubblicizzati dal Panel sono errati, se non manipolati. E crescono



Corriere della Sera, 13/2/2010

DATI FALSI ED EMERGENZA AMBIENTALE

HIMALAYA BENE IL RESTO MALE

di GIOVANNI SARTORI

Corriere della Sera, 8/3/2010

"L'effetto serra? Da quindici anni non ci sono prove"

Professore inglese riapre il "climate gate"

PHIL JONES
Il ricercatore si era dimesso a dicembre: «Alcuni dati sono stati manipolati»

L'ALTRA VERITÀ
«Tra l'anno 800 e il 1300 le temperature erano molto più alte di oggi»

1995 la data del presunto «stop»
Secondo le ammissioni di Phil Jones, ex capo del Centro di ricerca sul clima dell'Università dell'East Anglia, la temperatura non è cresciuta dal '95

25 anni di vita per i ghiacciai
Secondo le prime previsioni, smentite dopo le polemiche sulla possibile falsificazione dei dati, i ghiacciai dell'Himalaya avrebbero dovuto sciogliersi entro il 2035

700 anni fa faceva più caldo
«Dall'800 al 1300», rivela Jones, «le temperature erano forse più alte di oggi». Si tratta di quello che gli studiosi definiscono «Medieval Warm Period»

5 indagini in corso
Boom di inchieste scatenate dal «climategate»: sono quelle condotte in Gran Bretagna per fare luce sulle presunte manipolazioni di dati sul clima

La Stampa, 16/2/2010

nature
www.nature.com/nature
Vol 464 | Issue no. 7286 | 11 March 2010

Climate of fear

…the onslaught seems to be working: some polls in the United States and abroad suggest that it is eroding public confidence in climate science at a time when the fundamental understanding of the climate system, although far from complete, is stronger than ever.

lines and seldom make the time to assess facts and weigh evidence. Civility, honesty, fact and perspective are irrelevant.

Worse, the onslaught seems to be working: some polls in the United States and abroad suggest that it is eroding public confidence in climate science at a time when the fundamental understanding of the climate system, although far from complete, is stronger than ever. Ecologist Paul Ehrlich at Stanford University in California says that his climate colleagues are at a loss about how to counter the attacks.

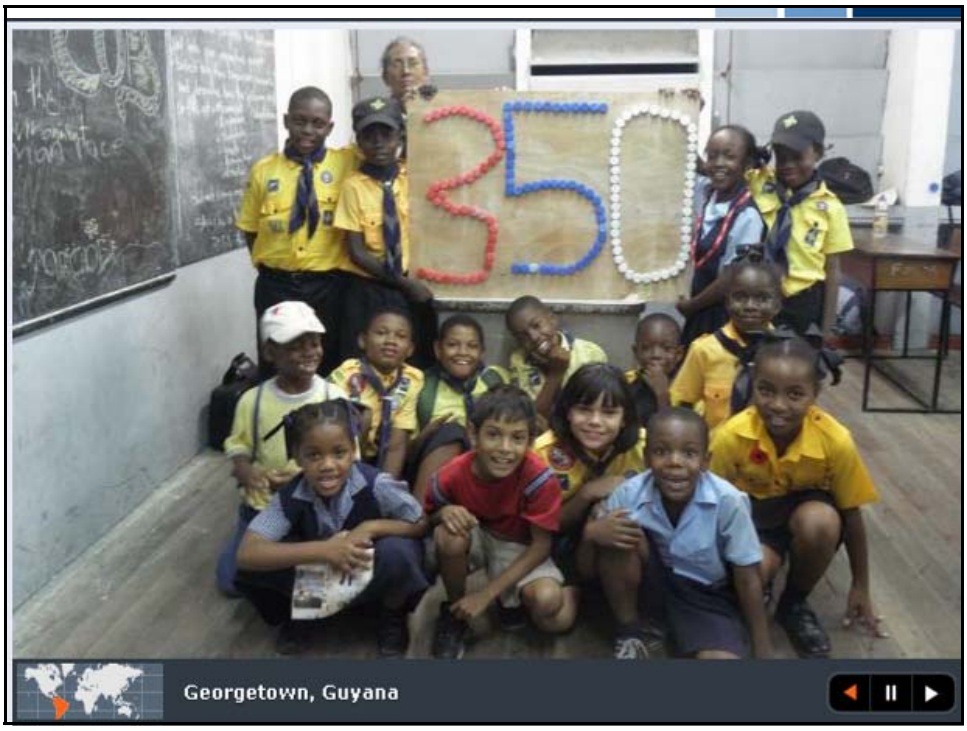
"Scientists must not be so naive as to assume that the data speak for themselves."

as the attention it receives, which is why scientists need to be careful about how they engage such critics.

The core science supporting anthropogenic global warming has not changed. This needs to be stated again and again, in as many contexts as possible. Scientists must not be so naive as to assume that the data speak for themselves. Nor should governments. Scientific agencies in the United States, Europe and beyond have been oddly silent over the recent controversies. In testimony on Capitol Hill last

www.350.org



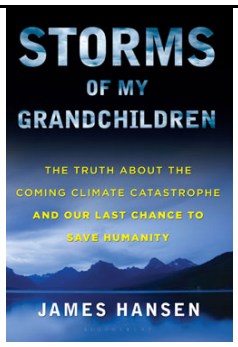

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Georgetown, Guyana

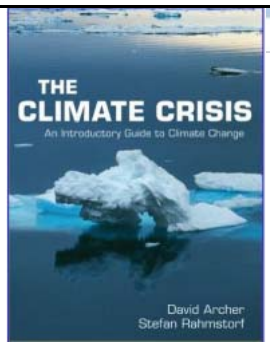

350
Glacier Park, Montana, United States

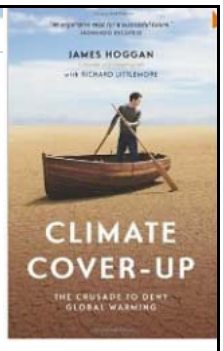

Cebu, Phillipines
Stefano Caserini
POLITECNICO DI MILANO















Stefano.Caserini@polimi.it Slide disponibili su www.ingegneriambientali.it

Siti utili

Climalteranti (www.climalteranti.it)

Terra e Clima (www.cmcc.it/blog)

Il Kyoto Fisso (http://antonellopasini.nova100.ilsole24ore.com)

United Nations Framework Convention on Climate Change (www.unfccc.int)

Intergovernmental Panel on Climate Change (www.ipcc.ch)

Commissione europea – Cambiamenti Climatici (http://ec.europa.eu/environment/climat/home_en.htm ()

Climate Action Network (www.climatenetwork.org)

Climate-L (http://climate-l.org/): Realizzato dall'International Institute for Sustainable Development, una fonte di notizie e documenti sulle negoziazioni internazionali sul clima; mailing list molto utile con frequenti offerte di lavoro