

Staying within the Climate Boundary Role for Hong Kong?

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Climate Change

325 ppm CO₂ < 1W m²
(300 – 350 ppm CO₂ ;
1-1.5 W m²))

Ozone depletion

< 5 % of Pre-Industrial 290 DU
(0 - 10%)

Biogeochemical loading: Global N & P Cycles

Limit industrial fixation of N₂ to 35 Tg N yr⁻¹
P < 20 % inflow to Oceans

Biodiversity Loss

< 10 E/MSY

Land System Change

≤15 % of land under crops

Atmospheric Aerosol Loading

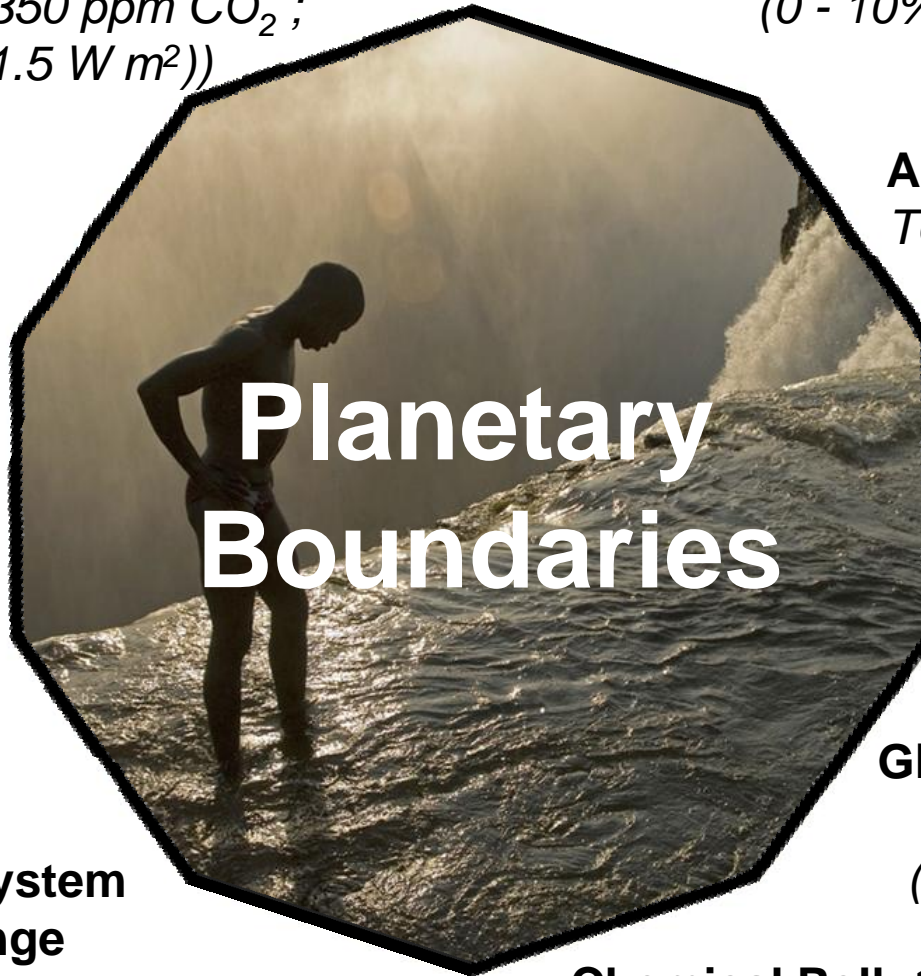
To be determined

Ocean acidification
Aragonite saturation ratio < 20 % below pre-industrial levels

Global Freshwater Use
<4000 km³/yr
(4000 – 6000 km³/yr)

Chemical Pollution

Plastics, Endocrine Disruptors,
Nuclear Waste Emitted globally
To be determined



Planetary Boundaries

Exploring the safe operating space for humanity

Johan Rockström, Will Steffen, Kevin Noone, Åsa Persson F. Stuart Chapin,
Eric F. Lambin, Timothy M. Lenton, Marten Scheffer & Carl Folke, Hans Joachim
Schellnhuber, Björn Nykvist, Cynthia A. de Wit, Terry Hughes, Sander van der Leeuw,
Henning Rodhe, Sverker Sörlin, Peter K. Snyder, Robert Costanza, Uno Svedin, Malin
Falkenmark, Louise Karlberg, Robert W. Corell, Victoria J. Fabry, James Hansen, Brian
Walker, Diana Liverman, Katherine Richardson, Paul Crutzen, Jonathan A. Foley.

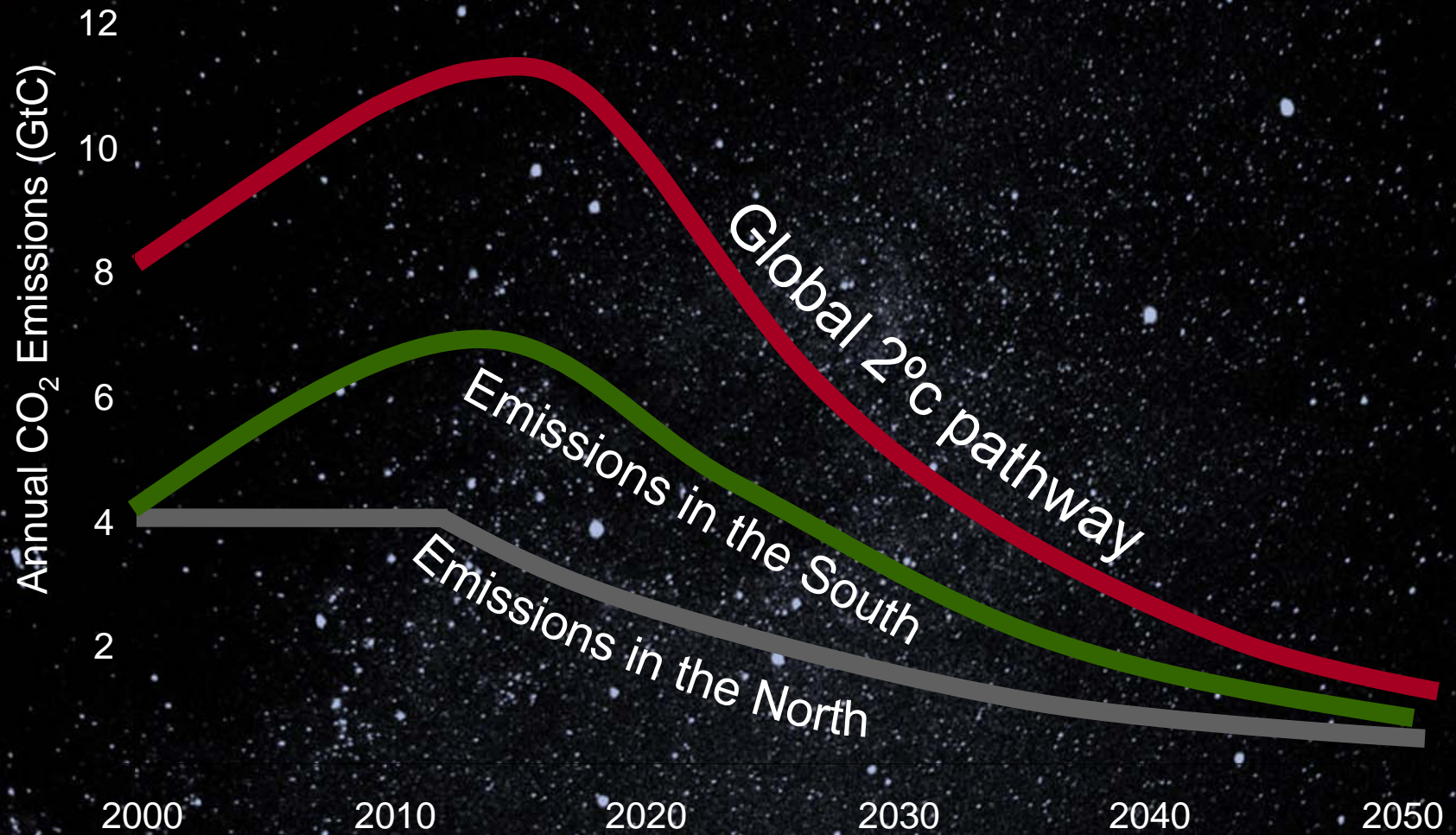
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Nature, September 2008

UNFCCC: The preamble

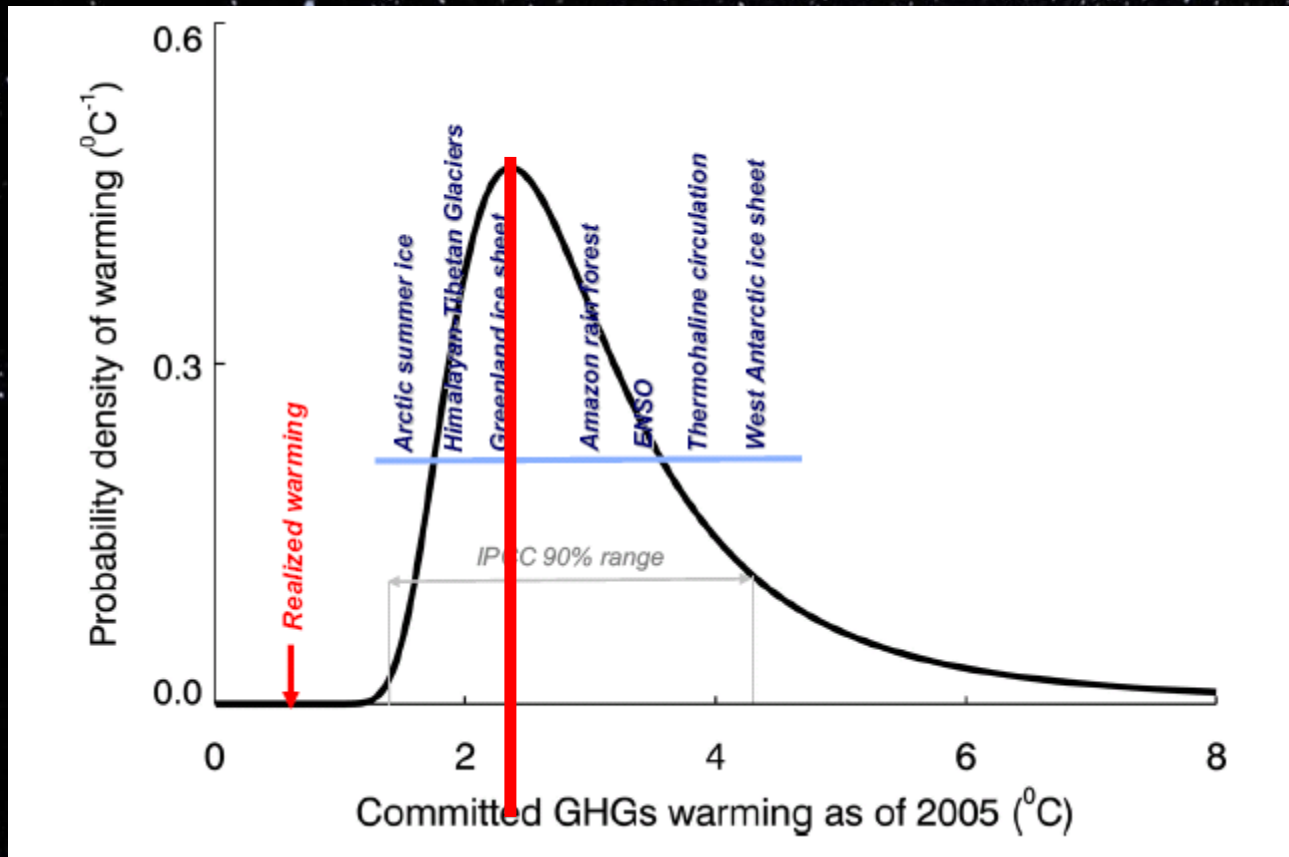
*“Acknowledging the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, **in accordance with their common but differentiated responsibilities and respective capabilities**”*

The climate challenge



Courtesy: Stockholm Environment Institute

Already Committed Global Warming

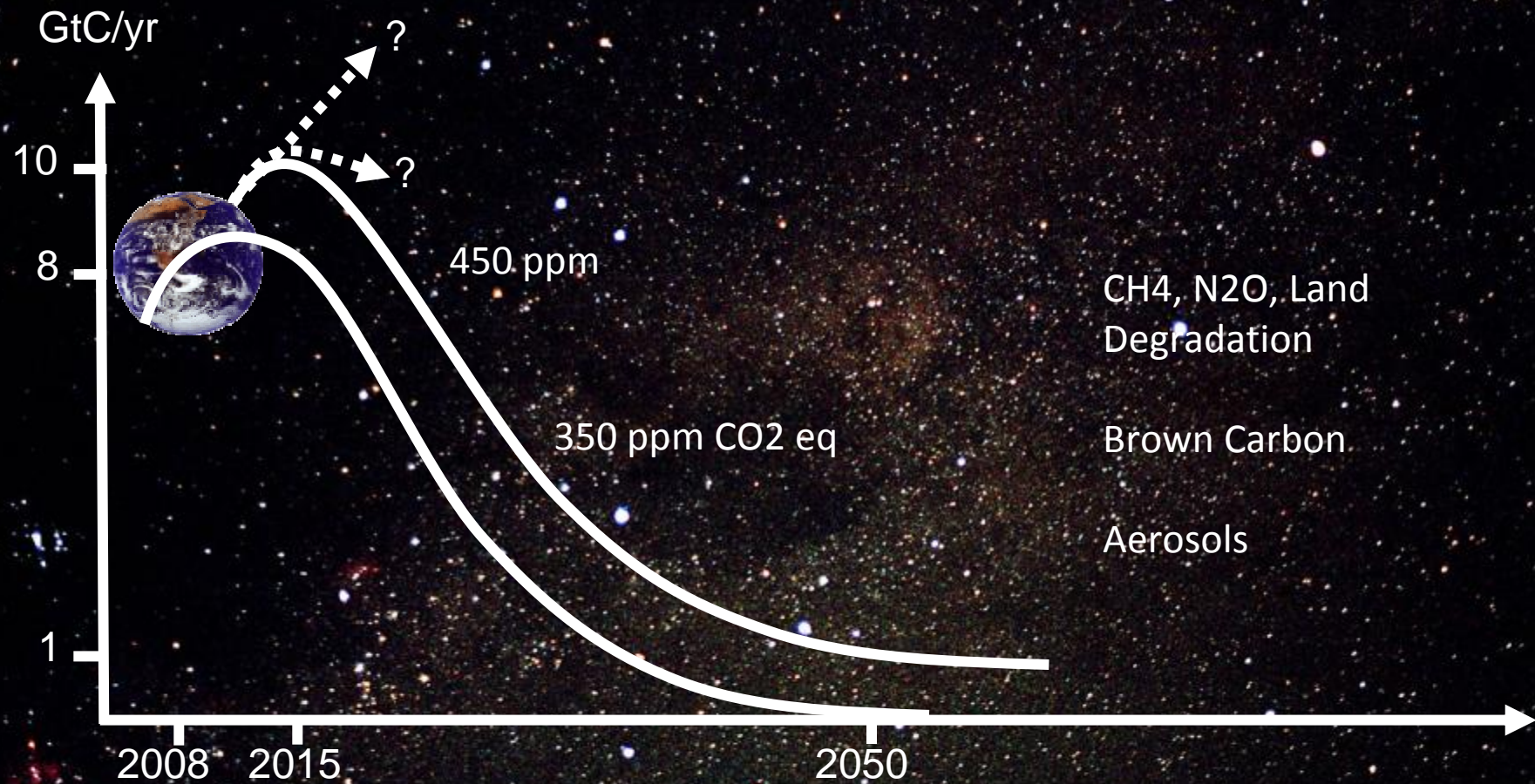


New studies show the Copenhagen Accord's current pledges could result in temperatures rising by up to 4.2 C, as well as oceans acidifying to the extent that coral reefs and marine-shelled organisms are seriously harmed.

See Joeri Rogelj et al, "Analysis of the Copenhagen Accord pledges and its global climatic impacts - a snapshot of dissonant ambitions", *Environmental Research Letters*, 2010.

The regime shift that has to occur

Global transformation towards a low-carbon world



Courtesy: Stockholm Environment Institute

COP-16 “a balanced package ...”

1. A new framework to help countries adapt to the already inevitable changes to the climate system;
2. The launch of a new mechanism to drive faster deployment of technology to developing nations with fast financing;
3. A decision to establish a new fund to oversee on a long-term basis the money raised for the specific climate needs of developing nations; and
4. A decision on early and large-scale action to protect forests and the livelihoods of those who live in them.

UNFCCC's Executive Secretary, Christiana Figueres
Tianjin, October 2010

Key Issues

1. China's Position and Efforts - national 'differentiated responsibilities'?
2. Importance of Regions and Cities.
3. Hong Kong's role ...
 - (a) Let's go first!
 - (b) Let's specialise!
 - (c) Let's be ambitious!