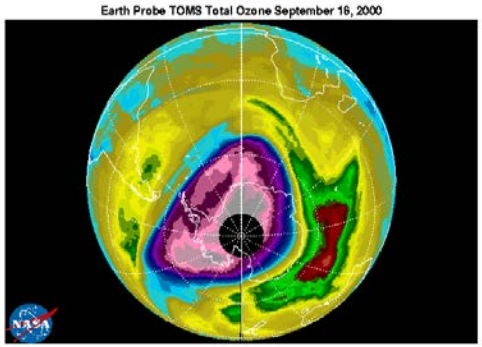


Earth System Governance

World Politics in the "Anthropocene"

Frank Biermann

Professor of Global Sustainability Governance
Copernicus Institute of Sustainable Development
Utrecht University

Institutions

- Political Science
- International Relations
- International Law

Sustainability

- Global change
- Inter- and Transdisciplinarity
- Global research collaboration

Overview

1. **Conceptualization**: The emergence of the "Anthropocene" and the "end of environmentalism"
2. **Propositions**: "Earth system governance" as new issue area of political science
3. **Research Practice**: The Earth System Governance Project (and Future Earth)

Biermann, *Earth System Governance: World Politics in the Anthropocene*, MIT Press 2014

Anthropocene: “The Age of Humans”

THE NEXT GOLDEN STATE: A 16-PAGE SPECIAL REPORT ON AUSTRALIA

The Economist

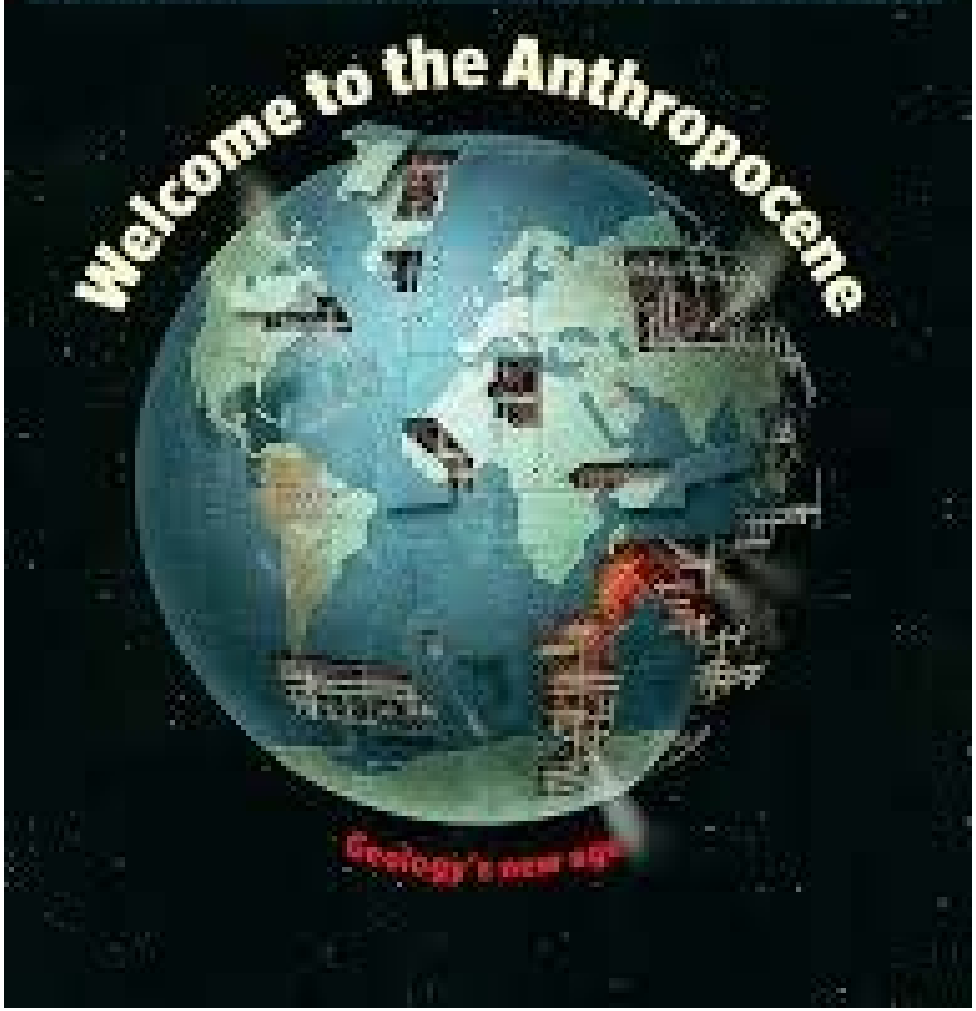
Obama, Bibi and peace

Huntsman blows his horn

A soft landing for China

The costly war on cancer

How the brain drain reduces poverty

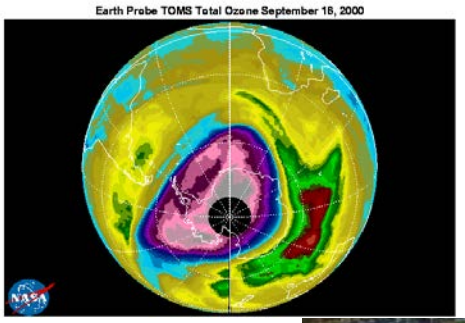


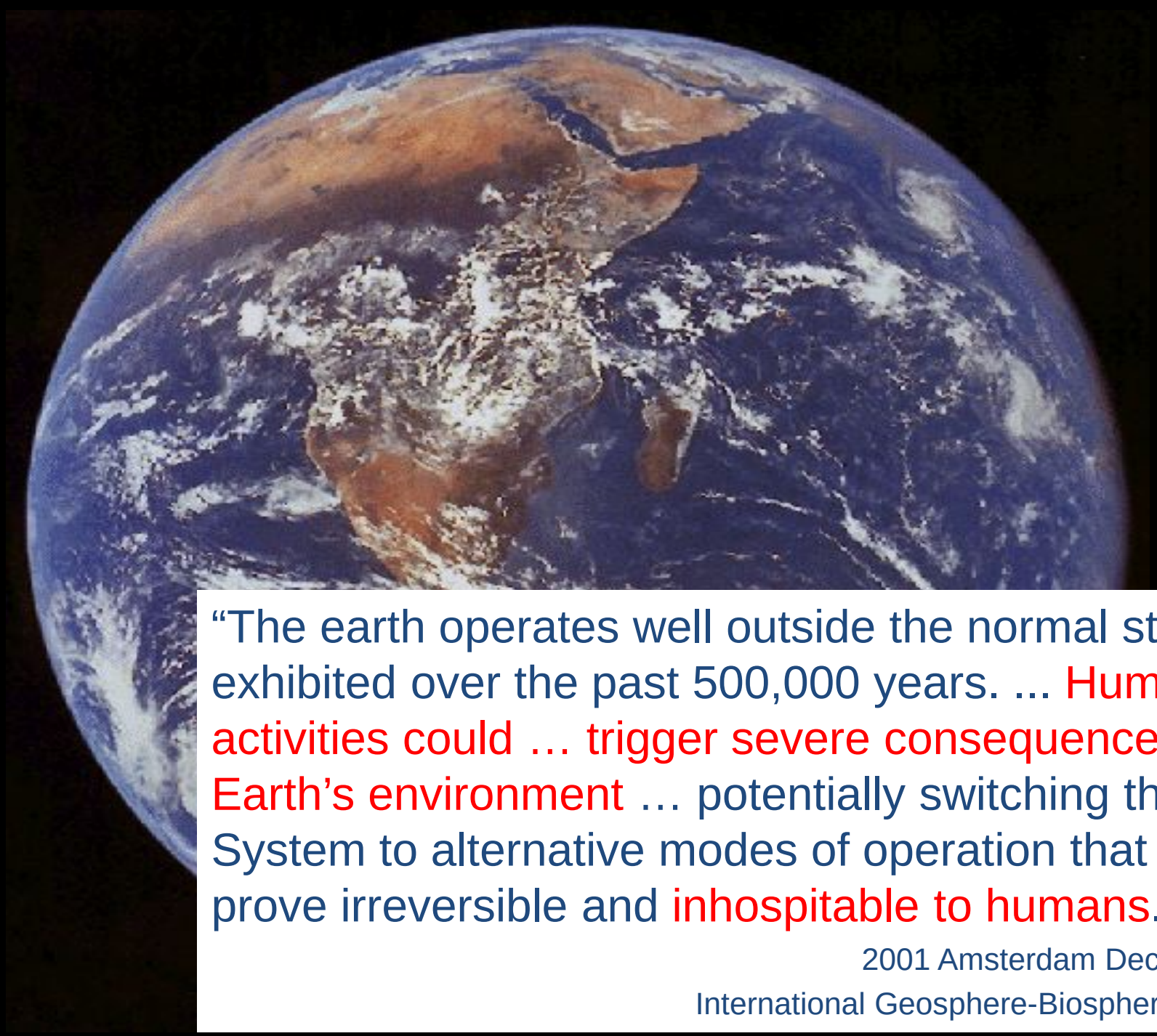
The Emergence of the "Anthropocene"

"The End of Environmentalism"

From early environmentalism towards ….

… a planetary perspective





"The earth operates well outside the normal state exhibited over the past 500,000 years. ... Human activities could … trigger severe consequences for Earth's environment … potentially switching the Earth System to alternative modes of operation that may prove irreversible and inhospitable to humans."

2001 Amsterdam Declaration of the International Geosphere-Biosphere Programme

Major conceptual declarations and papers:

- Compare the impact of "humanity" to "planetary-scale geological processes such as ice ages" (2012 Planet under Pressure Declaration, see Brito and Stafford-Smith, 2012)

- Speak of "human-driven change" without differentiating between diverse social groups and regions (2001 Amsterdam Declaration, see Moore et al., 2001)

- The Anthropocene lens needs to be contextualized: as a view of the planet as an interconnected, interdependent social-ecological complex while taking into account both local variation and social inequalities.

- *Better Understanding:* Only a contextualized, localized and social conceptualization of the Anthropocene helps to better understand global interconnections and disparities.

- *Better Governance:* It also helps to develop effective multilevel and polycentric governance solutions that (a) decrease the human impacts on the planet and (b) increase well-being particularly in the most impacted societies.

Contents lists available at ScienceDirect

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha

Down to Earth: Contextualizing the Anthropocene☆

Frank Biermann[a,b,*], Xuemei Bai[c], Ninad Bondre[d], Wendy Broadgate[e], Chen-Tung Arthur Chen[f], Pauline Dube[g], Jan Willem[...], Sandra van der Hel[k], Maria Carmen Lemos[l], Sybil Se[...]

[a] Copernicus Institute of Sustainable Development, Utrecht University, 3508 TC Utrecht, The[...]
[b] Lund University Center for Sustainability Studies, Lund University, 221 00 Lund, Sweden
[c] Fenner School of Environment and Society, Australian National University, Canberra ACT 2[...]
[d] International Geosphere-Biosphere Programme, Royal Swedish Academy of Sciences, 104 0[...]
[e] The Fisheries Secretariat, 111 29 Stockholm, Sweden
[f] Institute of Marine Geology and Chemistry, National Sun Yat-Sen University, Kaohsiung 80[...]

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha

Plausible and desirable futures in the Anthropocene: A new research agenda

Xuemei Bai[a,*], Sander van der Leeuw[b], Karen O'Brien[c], Frans Berkhout[d], Frank Biermann[e], Eduardo S. Brondizio[f,g], Christophe Cudennec[h], John Dearing[i], Anantha Duraiappah[j], Marion Glaser[k], Andrew Revkin[l], Will Steffen[m,n], James Syvitski[o,p]

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Re-conceptualizing the Anthropocene: A call for collaboration

Eduardo S. Brondizio[a,*], Karen O'Brien[b], Xuemei Bai[c], Frank Biermann[d], Will Steffen[c,e], Frans Berkhout[f], Christophe Cudennec[g], Maria Carmen Lemos[h], Alexander Wolfe[i], Jose Palma-Oliveira[j], Chen-Tung Arthur Chen[k]

[a] Department of Anthropology, Center for the Analysis of Social-Ecological Landscapes (CASEL), and The Ostrom Workshop in Political Theory and Policy Analysis, Indiana University Bloomington, United States
[b] Department of Sociology & Human Geography, University of Oslo, Norway

Politics in the Anthropocene

Earth **as a System** influenced by human action

Earth System **Science**

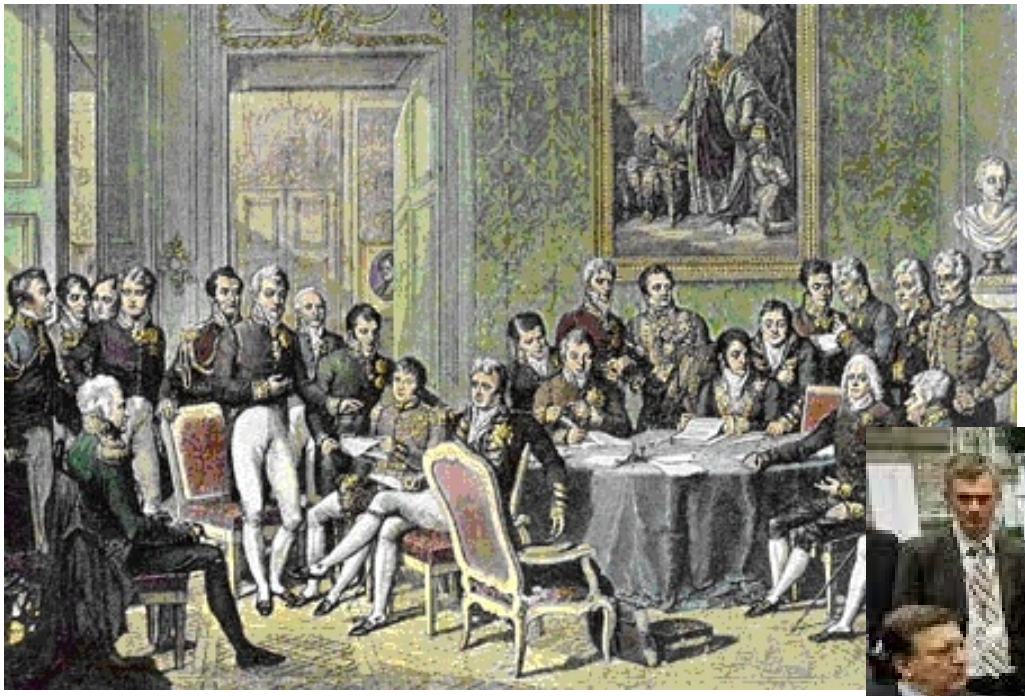
~~Environmental~~ Politics

~~Earth System Management~~

Earth System Governance

An Emergent Earth System Governance?

From Old-Style Government to New Politics



Earth System Governance

Crisis of Sustainability Governance

Calls for Action

- *2011 Nobel Laureate Symposium on Global Sustainability* urgently called for "strengthening earth system governance".

- The 2012 *State of the Planet* Declaration called for "[f]undamental reorientation and restructuring of national and international institutions … and … to move to effective earth system governance."

- *International Council for Science* in 2012 requested governments to fundamentally "overhaul" the entire UN system.

Towards a Dynamization of Governance *Research*

Earth System Governance

Earth System Governance Research:

- an **empirical-analytical research programme**,

  describing and explaining **current** governance processes **at all levels**

- a **normative research programme**,

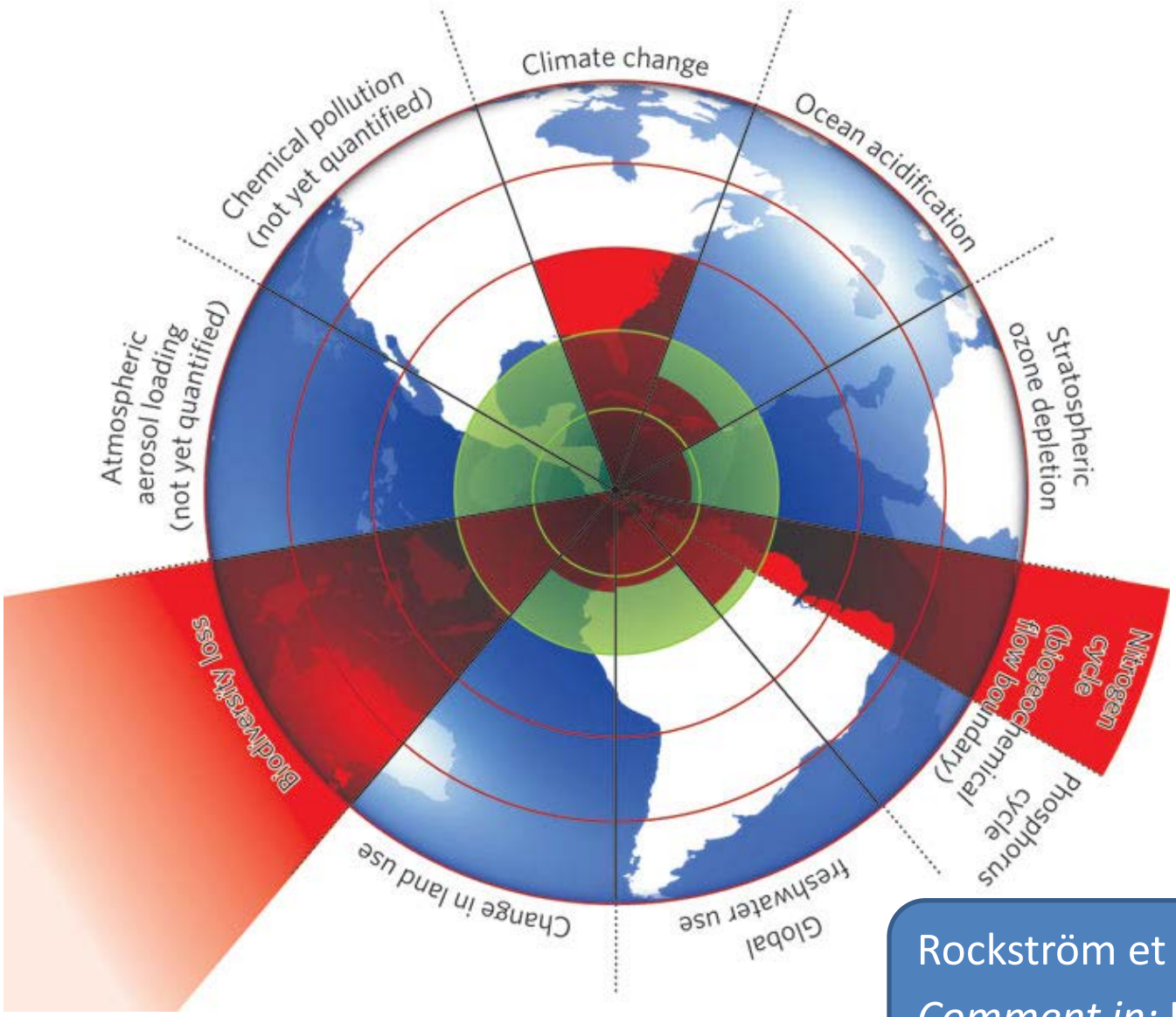
  exploring necessary governance transformations to keep human-nature co-evolution within parameters that sustain human life on earth

Earth System Governance

The Normative Challenge of Earth System Governance

The Good Anthropocene?

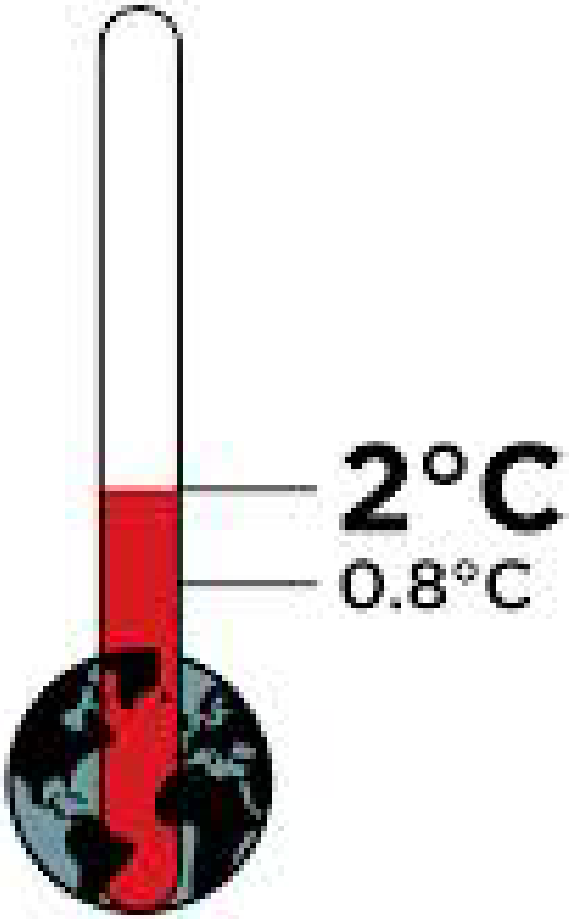
“Planetary Boundaries” as Earth System Constraints?



Rockström et al., *Nature*, 2009

Comment in: Biermann, 2012, *Ecological Economics*

Contested Goals
E.g., max. 2 degree global warming



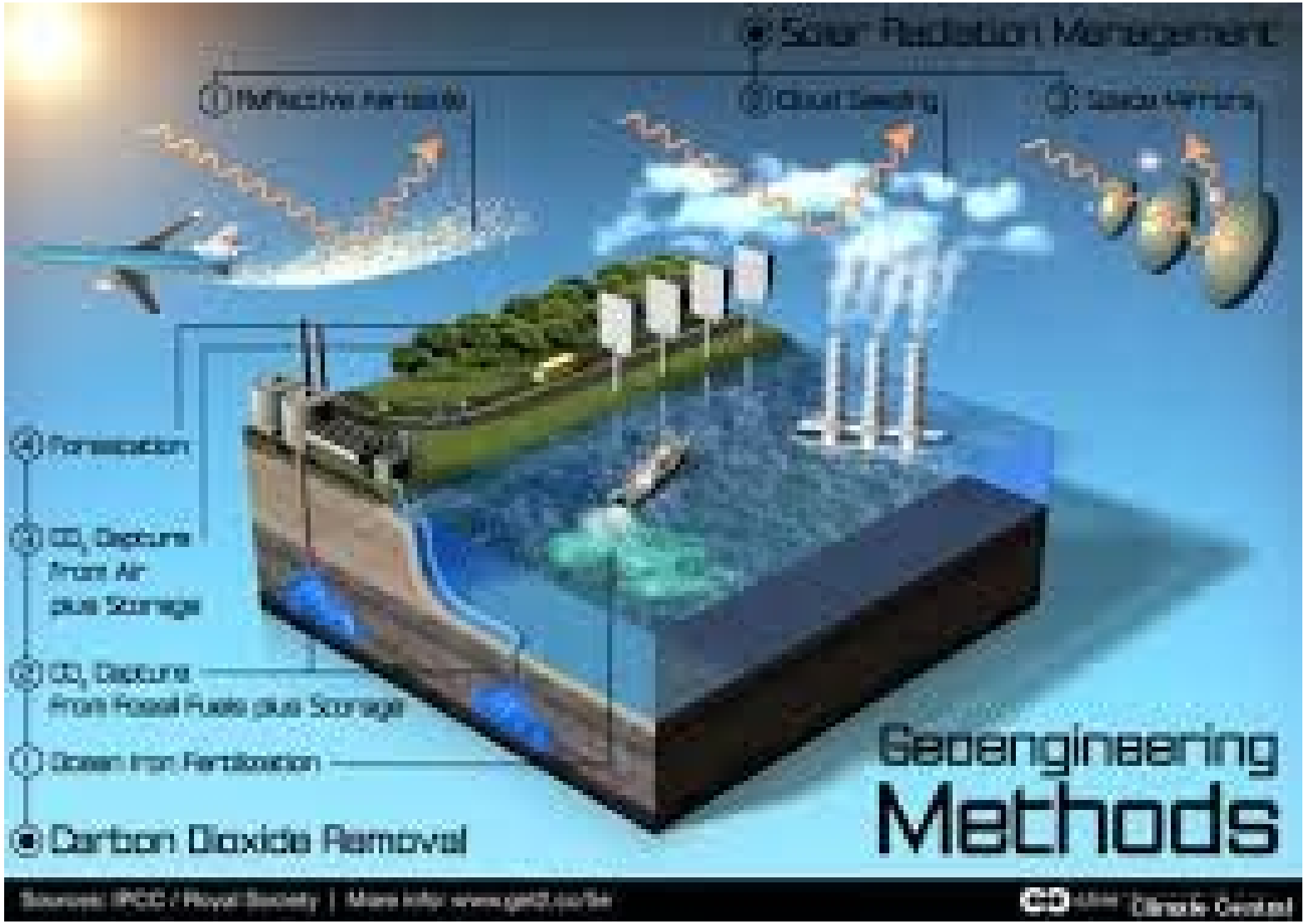
Human Wellbeing within Planetary Wellbeing: E.g., the “Doughnut Model” (Oxfam)

RIO+20
United Nations Conference on Sustainable Development

Sustainable Development Goals:

Normative Framework of the Anthropocene?

N. Kanie and F. Biermann, editors, Governing Through Goals, MIT Press 2017


Solar Radiation Management
Geoengineering
Methods
Carbon Dioxide Removal

F. Biermann and I. Möller, “Rich Man’s Solution: Geoengineering Discources and the Marginalisation of the Global Poor, unpl. Paper 2016

Key Analytical Questions of Earth System Governance

Agency

→ The key agents in governance

Architecture

→ Institutional arrangements in earth system governance

Accountability/Legitimacy

→ Towards democratic earth system governance

Allocation

→ Who gets what in earth system governance

Adaptiveness

→ Preparing for inevitable global change

Agency in Earth System Governance

The State

Civil Society Organizations

International Bureaucracies

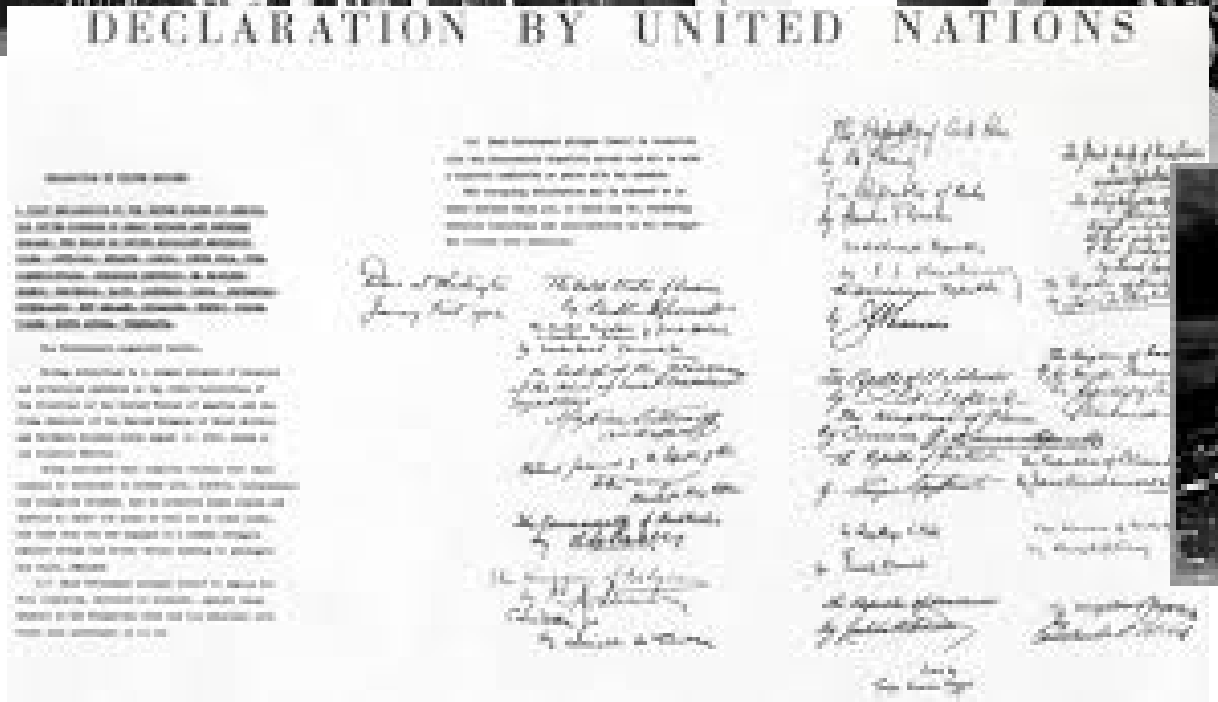
Science Networks

Public-Private Partnerships

Subnational public authorities

Corporations

Multilateral system is outdated

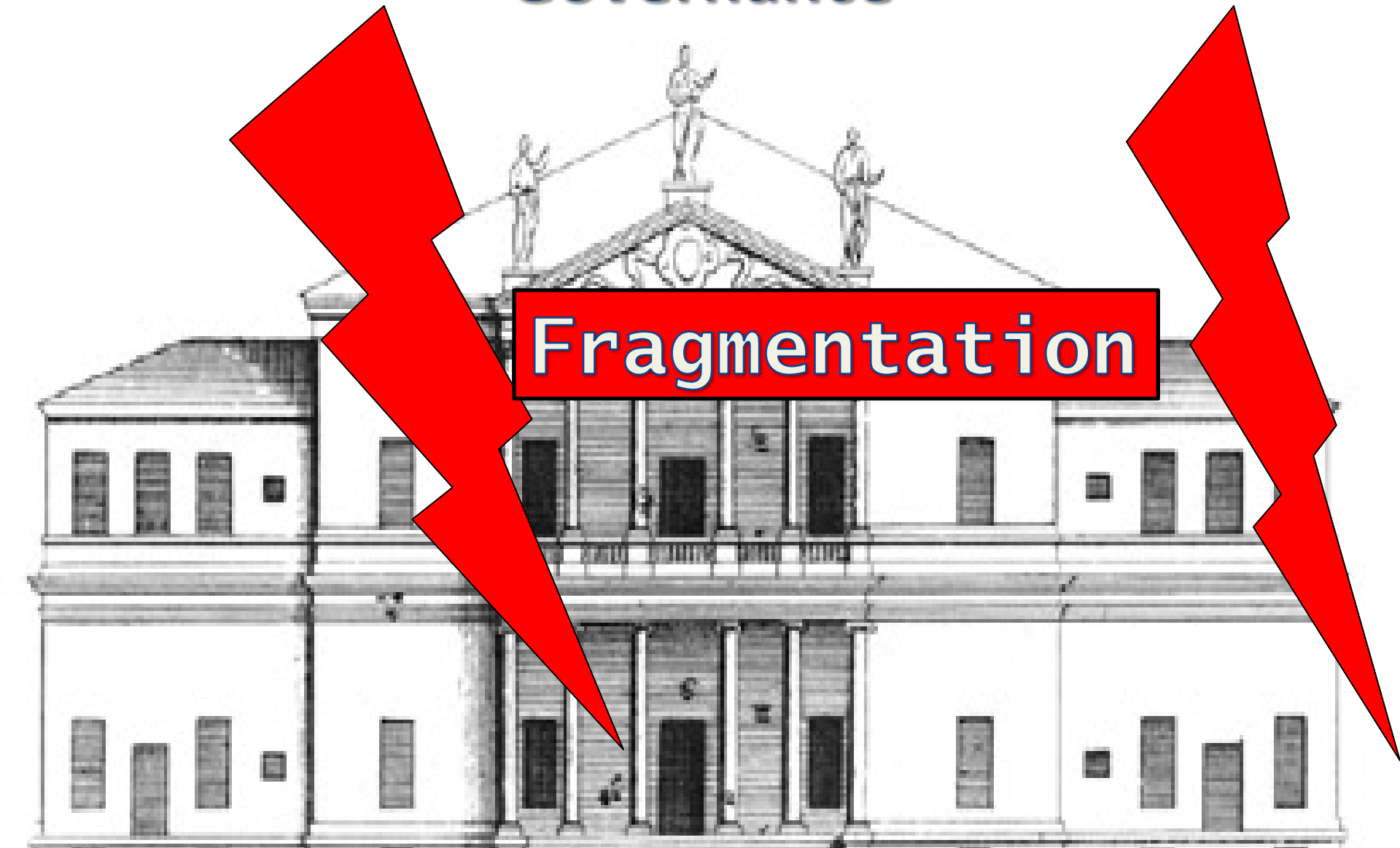


Reform: A World Environment Organization

- **Function:** Strengthening environmental pillar in earth system governance by creating specialized agency, similar to WHO, ILO, FAO, etc.

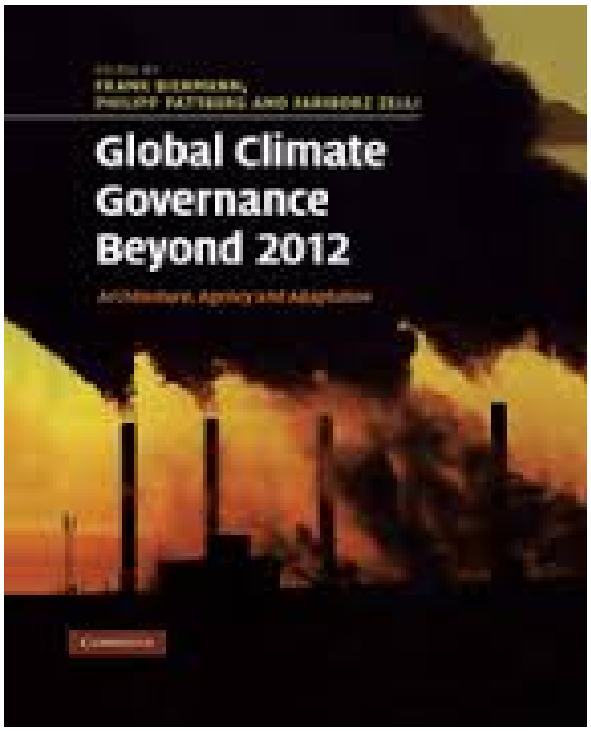
- **Proposal: A World Environment Organization**
  - Upgrade of UN Environment Programme to full agency status
  - Mandate to negotiate new treaties (model ILO, WHO)
  - Oversight over implementation of treaties
  - Possibly oversight over coordination of multilateral environmental agreements (WTO model)
  - Assessed financial contributions

Architectures of Earth System Governance



Earth System Governance

Keohane/Victor 2010



Coping with Fragmentation

- Exploring avenues for increasing governance coherence
- Accepting continued relevance of multilateralism and the United Nations system, while acknowledging reform needs
- Exploring interlinkages between intergovernmental and non-state institutions

The Fragmentation of Global Governance Architectures: A Framework for Analysis

Frank Biermann, Philipp Pattberg, Harro van Asselt, and Fariborz Zelli[1]

Introduction

Most research on global governance has focused either on theoretical accounts of the overall phenomenon or on empirical studies of distinct institutions to solve particular governance challenges. Only very recently have scholars begun to investigate the middle level, that is, larger systems of institutions and governance mechanisms in particular areas of world politics, which are sometimes referred to as regime complexes, clusters, or networks.[2] In this article, we conceive of such clusters of norms, principles, regimes and other institutions as the "governance architecture" of an issue area.[3] We focus our analysis on one aspect of global governance architectures that, we argue, is turning into a major source of

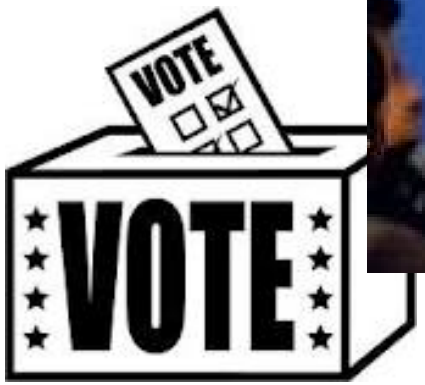
Transforming the UN System: A UN Sustainable Development Council?

- High-level organ within United Nations
- Integrate global environmental and economic policies
- Guidance among others to Bretton Woods organizations

Biermann et al., *Science*, 16 March 2012

Reform: Strengthening international environmental treaties

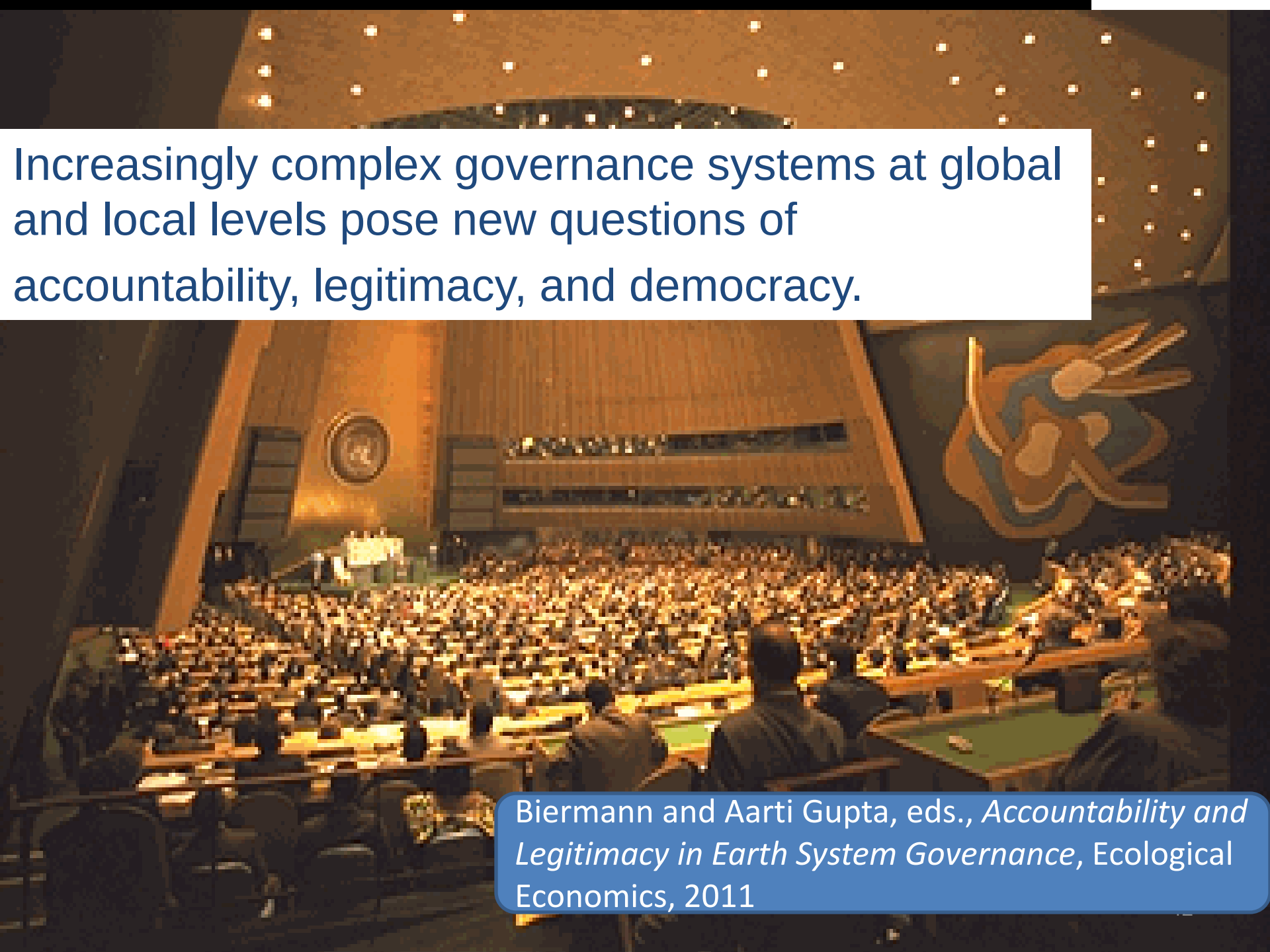
- Governments must engage in structural reforms in how environmental negotiations are conducted and treaties designed.
- Present and future treaties must rely more on qualified majority voting in specified areas.



Biermann et al., *Science*, 16 March 2012

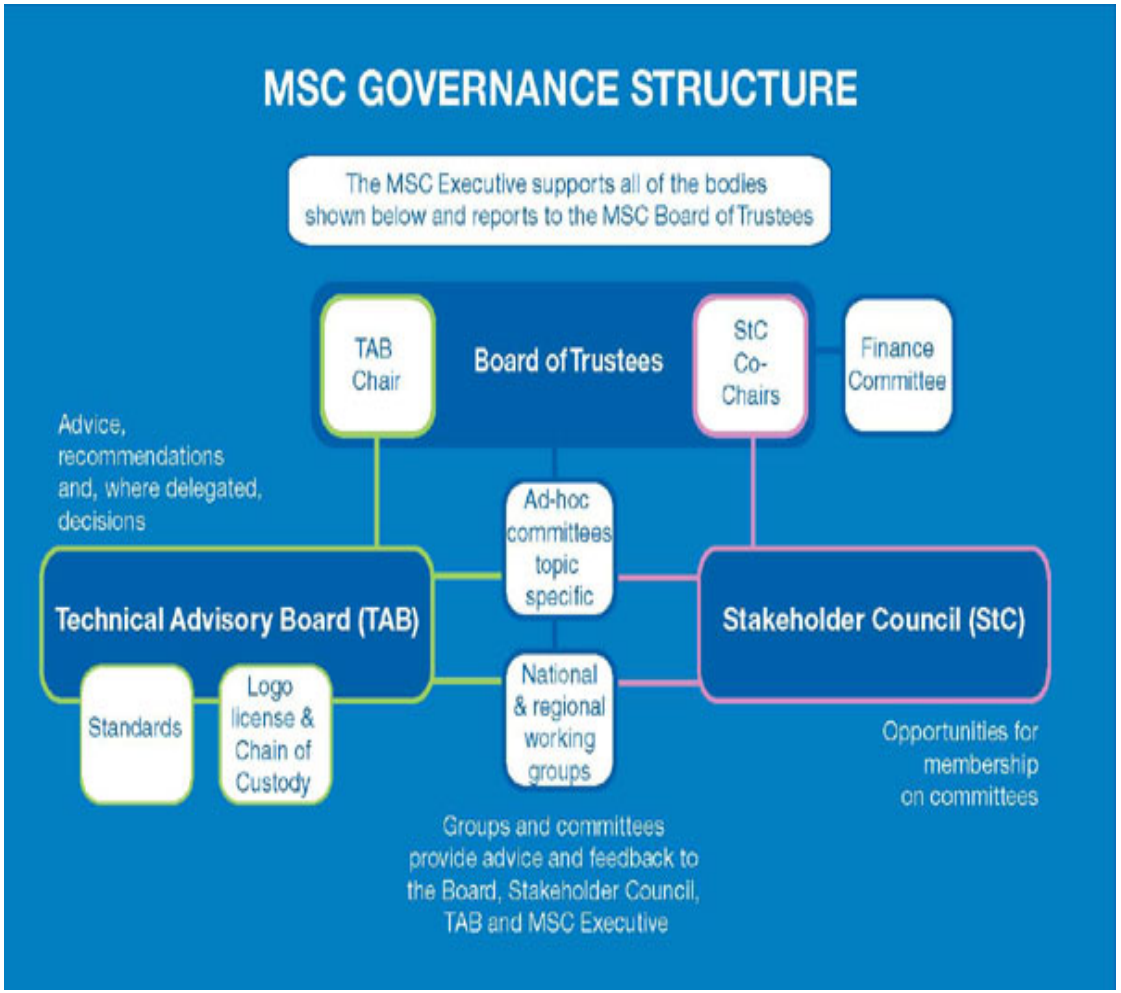
Problems with Weighted Voting

- One country, one vote?
  - ~5 % of human population combine 50% of the votes
- One person, one vote?
  - 7 countries combine 50% of the votes
  - 186 countries combine the other 50%
- Different majority and voting rules for different issue areas?
- Multiple, complex, combined, or layered majorities?



Increasingly complex governance systems at global and local levels pose new questions of accountability, legitimacy, and democracy.

Biermann and Aarti Gupta, eds., *Accountability and Legitimacy in Earth System Governance*, Ecological Economics, 2011

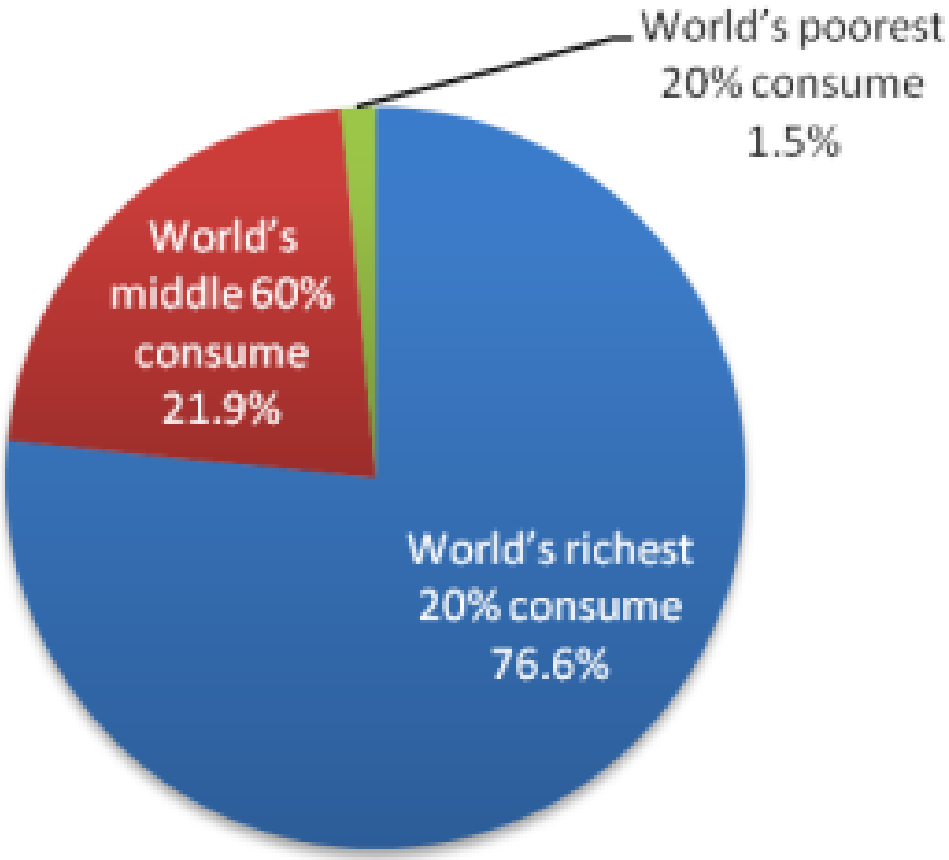


Biermann and Aarti Gupta, eds., *Accountability and Legitimacy in Earth System Governance*, Ecological Economics, 2011

- Global institutionalisation and regulation require novel accountability mechanisms.
- Options include
  - A Global Forum of Civil Society
  - A World Parliamentary Assembly
  - Global Deliberative Assembly

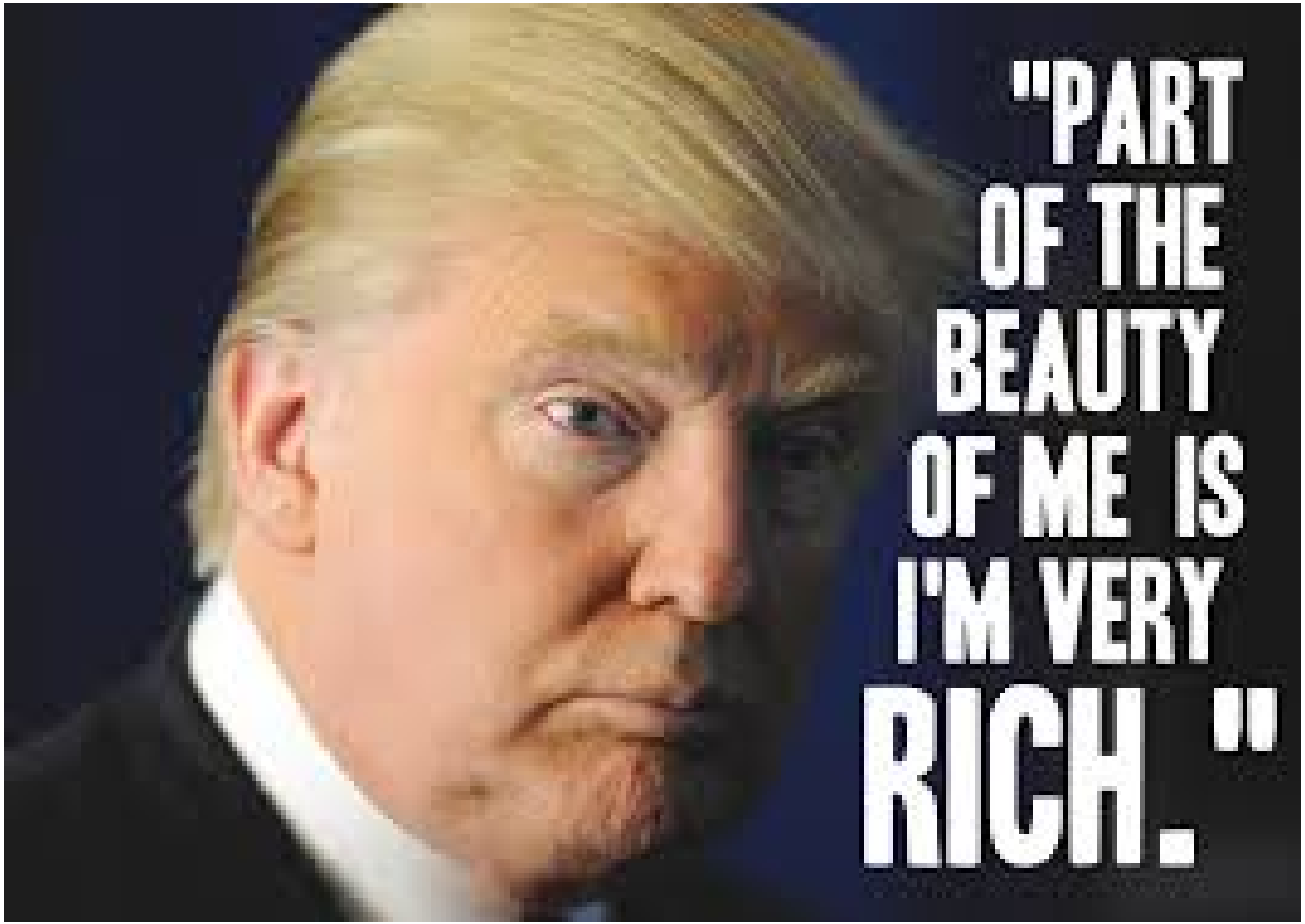
Allocation: Earth System Governance on a Highly Divided Planet

Share of world's private consumption, 2005



Source: World Bank Development Indicators 2008

THE WORLD'S
62
RICHEST PEOPLE OWN
THE SAME WEALTH
AS THE 3.6 BILLION
POOREST PEOPLE


"PART
OF THE
BEAUTY
OF ME IS
I'M VERY
RICH. "

Donald J. Trump

@realDonaldTrump

Follow

The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.

RETWEETS 26,766 LIKES 16,065

1:15 PM - 6 Nov 2012

62 INDIVIDUALS

Have the same wealth as the poorest 3.6 billion people in the world

$542 BILLION

The increase in wealth of the richest 62 individuals since 2010

$1 TRILLION

The fall in wealth of the poorest 3.6 billion people since 2010

1%

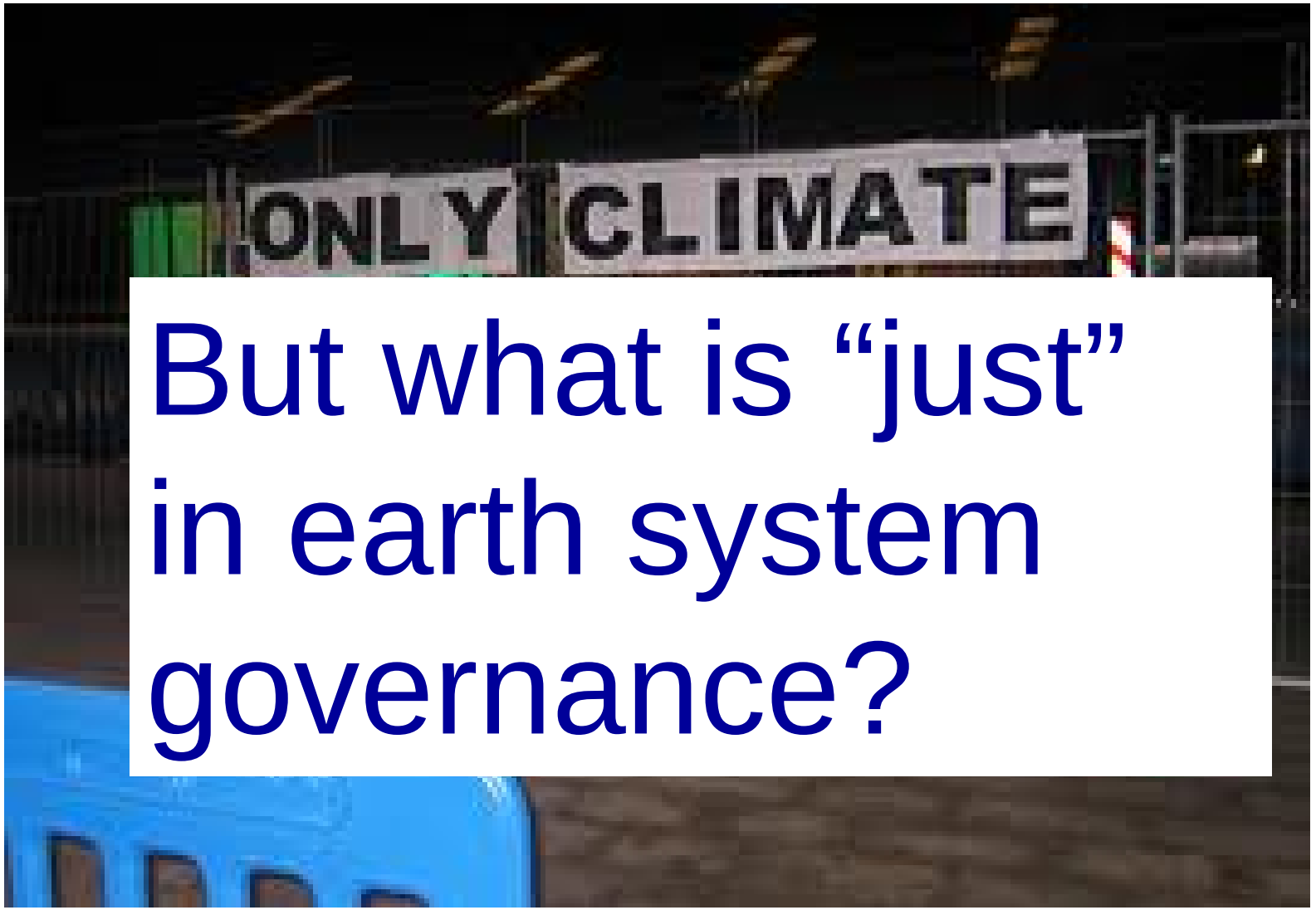
Since 2000, the poorest half of the global population received only 1% of the increase in global wealth

50%

The amount of the global wealth increase since 2000 received by the top 1%

$3

Rise in the average annual income of the poorest 10% of people in the world



But what is “just” in earth system governance?

Adaptiveness: In the end …

we might need to prepare for a (much) warmer world

An Emerging Discourse of Climate Crisis

- “Given that [the 2° target] is an ambitious target, … we should be prepared to adapt to 4 degrees.”

  R. Watson, The Guardian, 2008

- “Society may be lulled into a false sense of security by smooth projections of global change.”

  Lenton et al. 2009

- “Planetary boundaries” have been violated in the case of climate change/global warming.

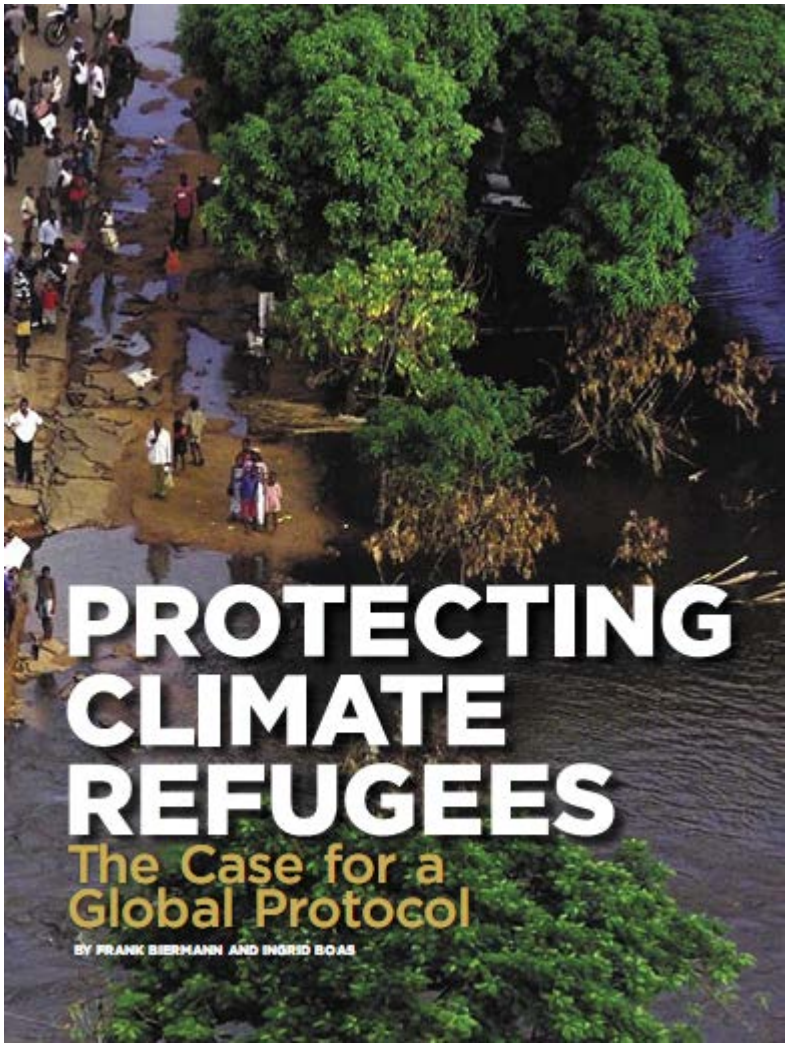
  Rochström et al. 2009

The Dutch Way?

Adaptation is costly in the North

Too costly for the South?

- 200-250 million climate refugees by 2050 according to Myers
- “Hundreds of millions” according to Stern Report
- 1 billion according to Christian Aid
- 12 million from Egypt by 2050
- 250 million at risk in Ganges Brahmaputra



Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees

Frank Biermann and Ingrid Boas[1]

Introduction

The need to mitigate climate change has dominated the debate on global environmental governance until very recently. It is now evident that mitigation efforts have been too little and too late. Climate change is a reality of world politics in the twenty-first century. This reality requires a new, additional focus in both academic research and policy planning: how can we build over the course of the next decades systems of global governance that will cope with the global impacts of climate change? What institutions are in need of redesign and strengthening? To what extent, and in what areas, do we need to create new institutions and governance mechanisms from scratch?

Not much policy research on these questions is available.[2] In light of the most recent scientific findings, which indicate possibly accelerating climatic change, there is thus an urgent need for a new academic research program on what we propose to call "global adaptation governance." Global adaptation governance will affect most areas of world politics, including many core institutions and organizations of current global governance. The need to adapt to climate change will influence, for example, the structure of global food regimes and the work of the UN Food and Agriculture Organization (FAO); global health governance and the agenda of the World Health Organization (WHO);

1. This research was funded by the European Commission (Global Change and Ecosystem Priority of the Sixth Framework Research Programme, Integrated Project "Adaptation and Mitigation Strategies. Supporting European Climate Policy" [ADAM Project], Contract no 018476). For valuable suggestions and comments, we are grateful to Harro van Asselt, Steffen Bauer, Klaus Dingwerth, Aarti Gupta, Mike Hulme, Henry Neufeldt, Sebastian Oberthür, Kate O'Neill, Philipp Pattberg, Fariborz Zelli, and the reviewers and editors of *GEP*. In addition, Frank Biermann wishes to thank The Energy and Resources Institute, New Delhi, for generous hospitality during a research visit in September and October 2007 where most of his research for this article was undertaken. More information is available at the website of the Climate Refugee Policy Forum, a new initiative set up by the Global Governance Project, a joint program of twelve European research institutions, at http://www.glogov.org/?pageid=80.
2. See Biermann 2007 and Biermann and Pattberg 2008 for reviews of global environmental governance research.

1 LINE SHORT
REGULAR
1 LINE LONG

Global Environmental Politics 10:1, February 2010
© 2010 by the Massachusetts Institute of Technology

Towards a Constitutional Moment

1944 – International Civil Aviation Organization

1944/45 – World Bank

1944/45 – International Monetary Fund

1945 – United Nations Organization

1945 – International Court of Justice

1945 – UN Food and Agriculture Organization

1945 – UN Educational, Scientific, and Cultural Organization

1946 – World Health Organization

1948 – International Maritime Organization

1950 – World Meteorology Organization,

Etc.

Earth System Governance

World Politics in the Anthropocene

Frank Biermann

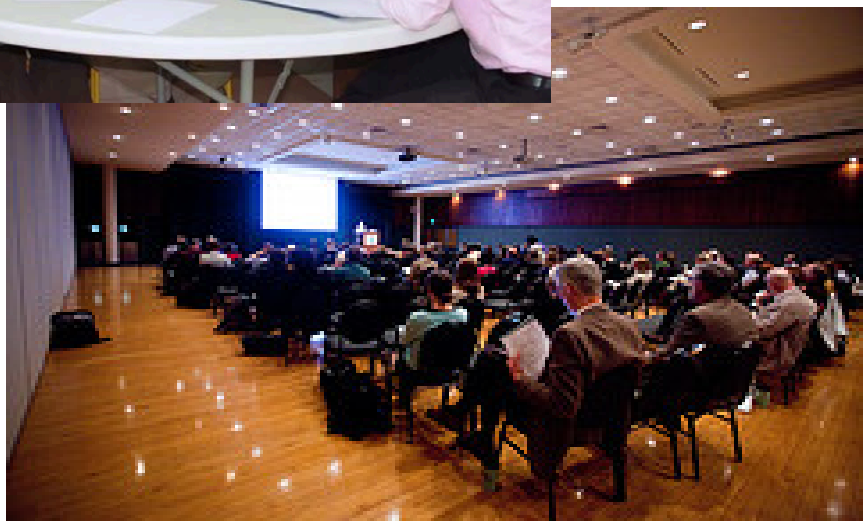
The Earth System Governance Project as a global research network

The Earth System Governance Project is ...

- … an international research network to study the governance dimensions of environmental change and earth system transformation;
- … endorsed and supported by leading global research organizations;
- … open to anybody who is interested in exploring these issues;
- … today the largest research alliance in the field.

Earth System Governance

People, Places, and the Planet

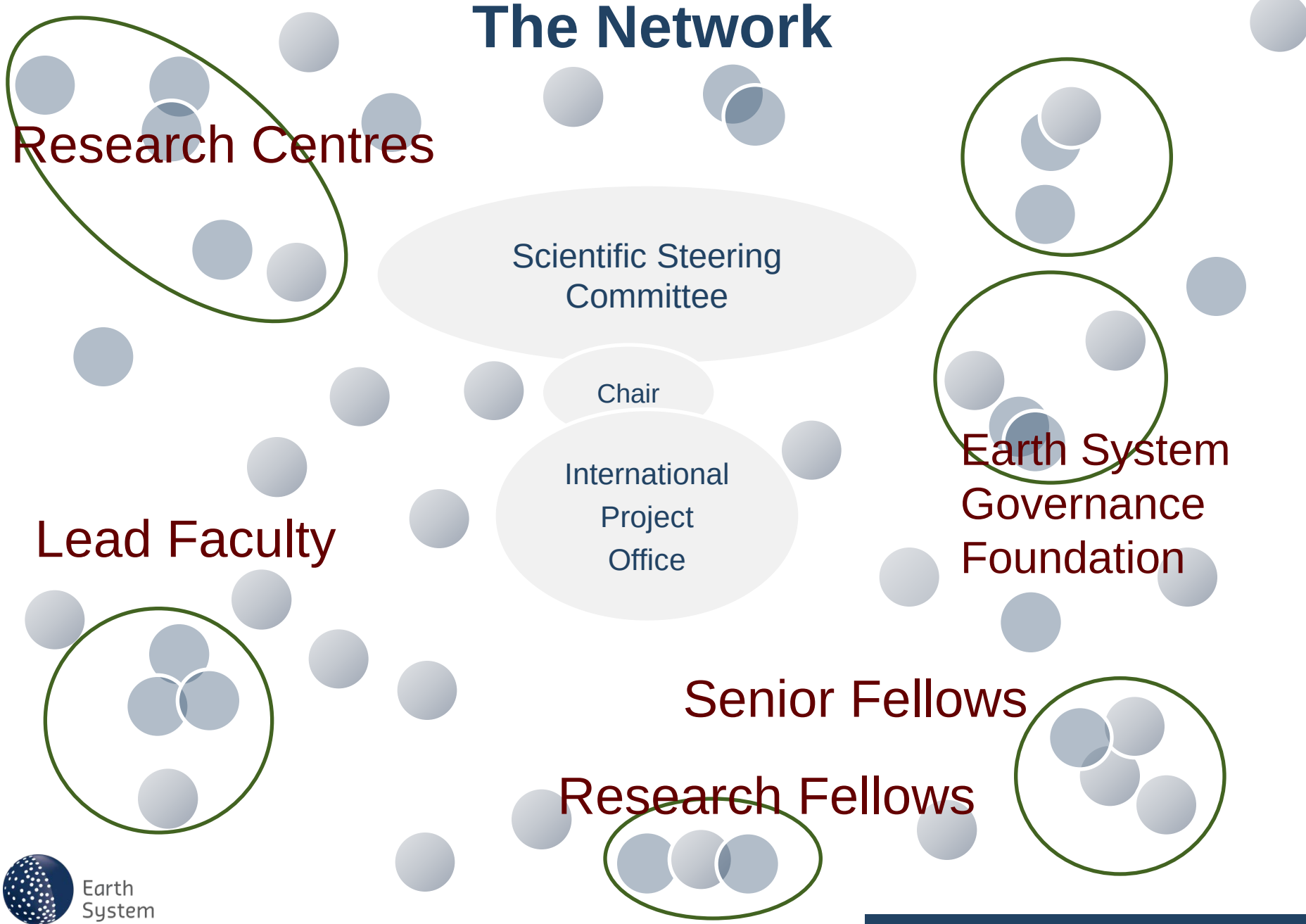


From a planetary perspective, we study local *and* global governance

(= “earth-system” governance)

Earth System Governance

The Network



Earth System Governance

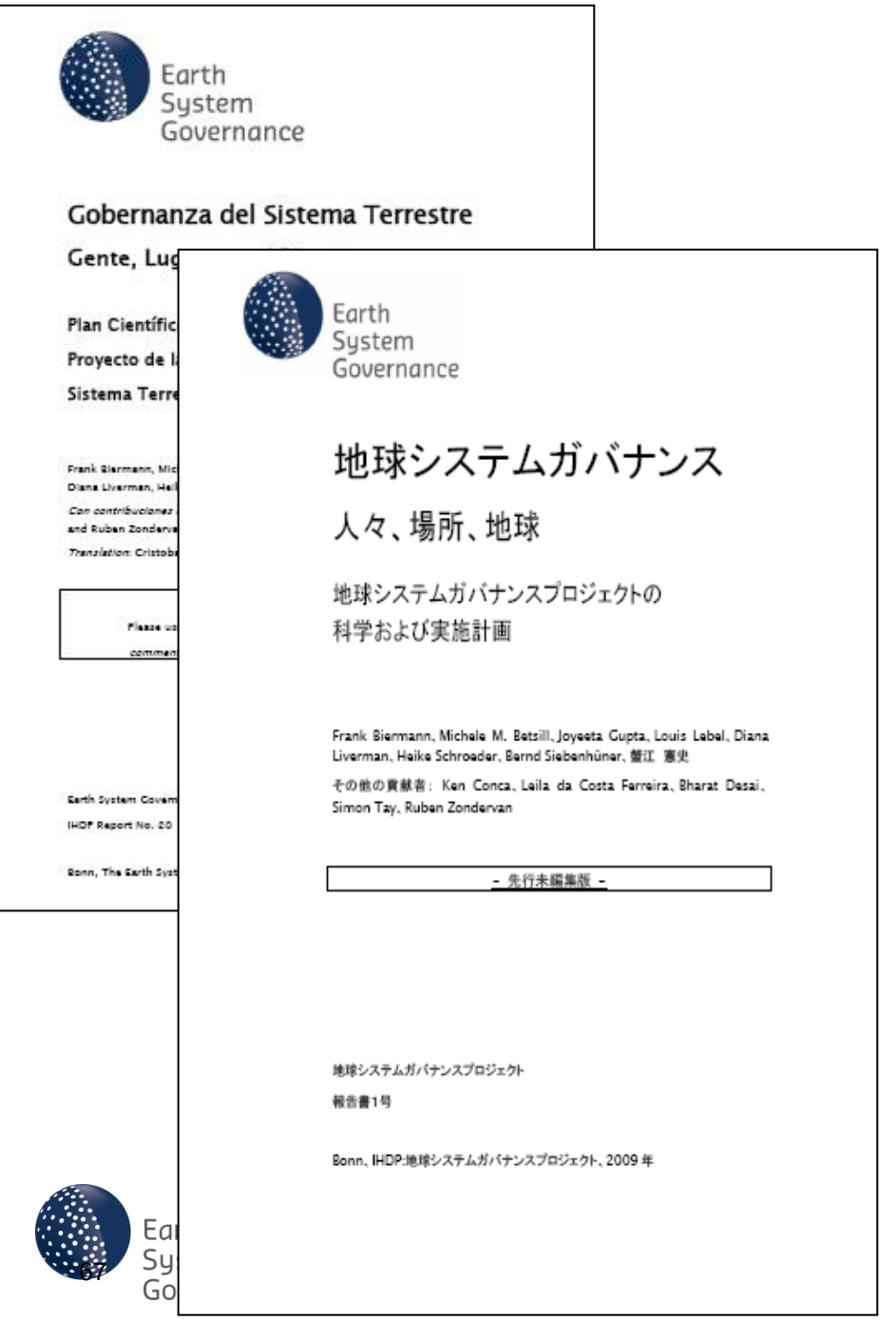
A Global Alliance of Research Centres

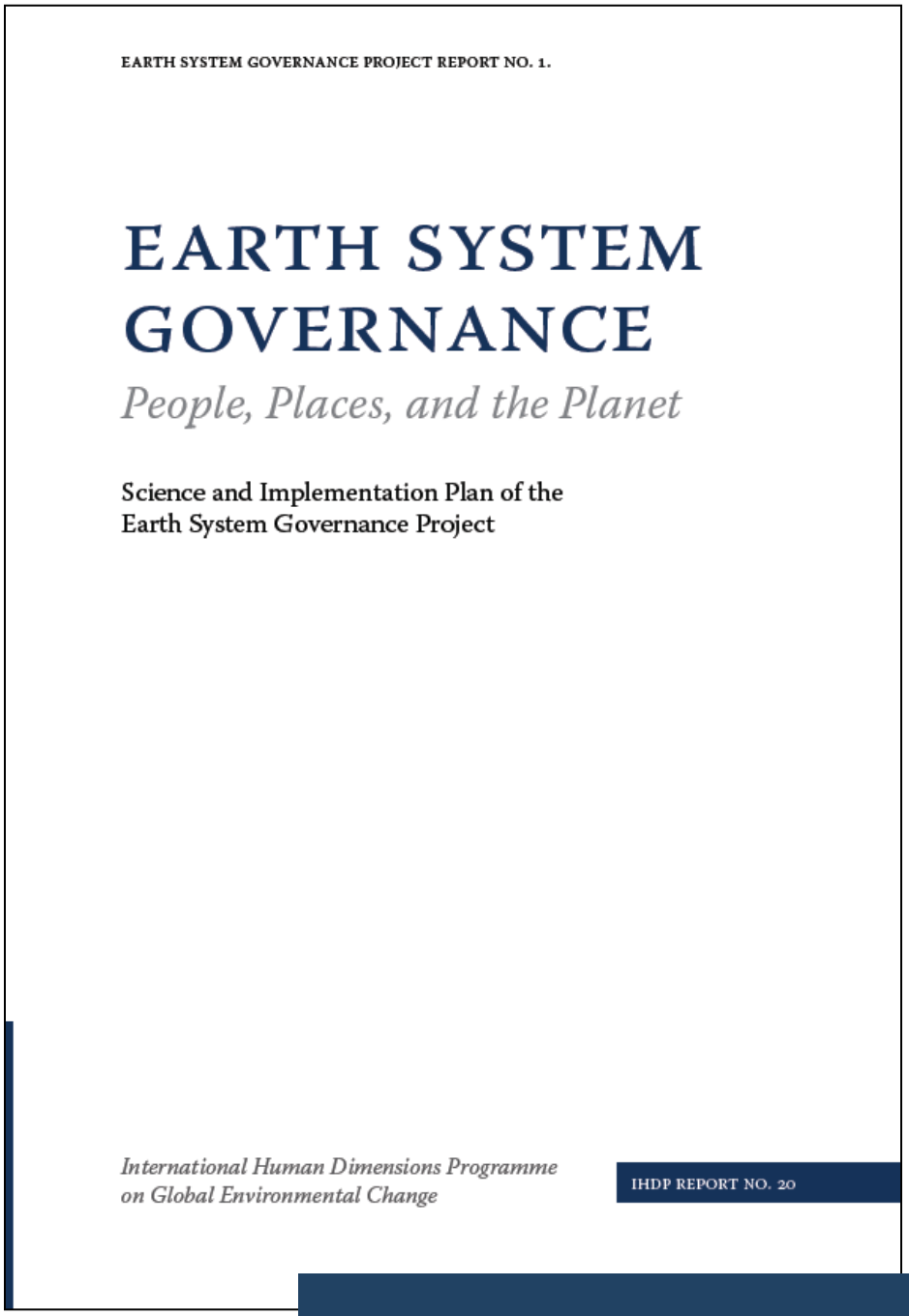
- **Australian** National University, Australia
- University of **Amsterdam, The Netherlands**
- **Chiang Mai** University, Thailand
- **Colorado** State University, United States
- University of **Ghana**, Ghana
- **Keio** University, Japan
- **Lund** University, Sweden
- **Norwich**, University of East Anglia, United Kingdom
- **Slovak Academy**, Slovak Republic
- **Stockholm** Resilience Centre, Sweden
- University of **Toronto**, Canada
- **Utrecht** University, Netherlands
- **Yale** University, USA

•*Networks in other regions are presently emerging*

Earth System Governance

International Project Office hosted by **Lund University,** Sweden


Earth
System
Governance
Gobernanza del Sistema Terrestre
Gente, Lug
Plan Científic
Proyecto de l
Sistema Terre
Earth
System
Governance
地球システムガバナンス
人々、場所、地球
地球システムガバナンスプロジェクトの
科学および実施計画
Frank Biermann, Michele M. Betsill, Joyeeta Gupta, Louis Lebel, Diana Liverman, Heike Schroeder, Bernd Siebenhüner, 舘江 憲史
その他の貢献者： Ken Conca, Laila da Costa Ferreira, Bharat Desai, Simon Tay, Ruben Zondervan
- 先行未編集版 -
地球システムガバナンスプロジェクト
報告書1号
Bonn、IHDP:地球システムガバナンスプロジェクト、2009 年


EARTH SYSTEM GOVERNANCE PROJECT REPORT NO. 1.
EARTH SYSTEM GOVERNANCE
People, Places, and the Planet
Science and Implementation Plan of the
Earth System Governance Project
International Human Dimensions Programme
on Global Environmental Change
IHDP REPORT NO. 20

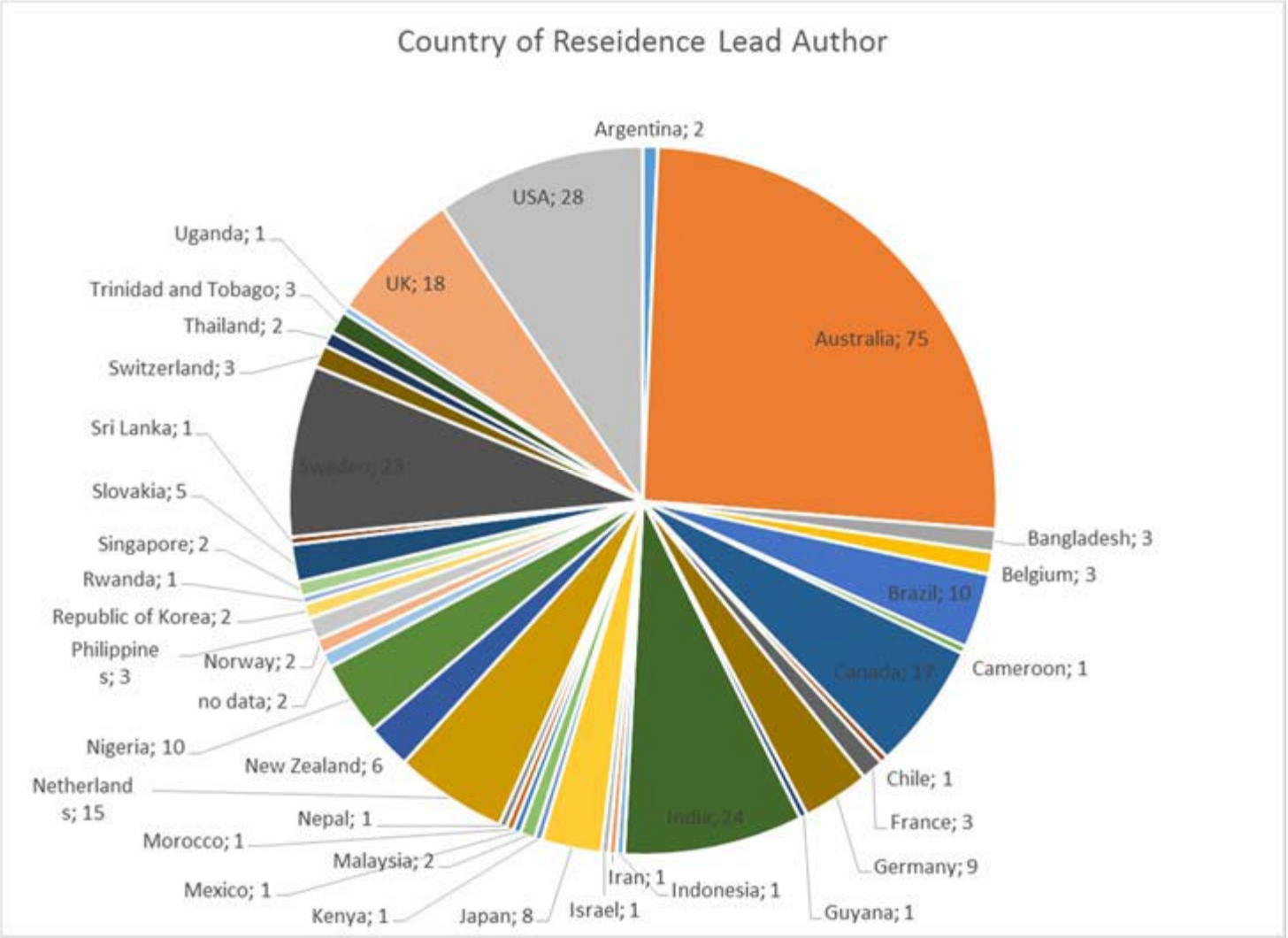
Conferences and other events

Earth System Governance

We organize and endorse numerous workshops and conferences

Flagships are our annual Earth System Governance open science conferences.

2015 Canberra Earth System Governance Conference "Democracy and Resilience in the Anthropocene"



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