

Future Earth: Research for Global Sustainability

RESCUE Synthesis Report Launch Event
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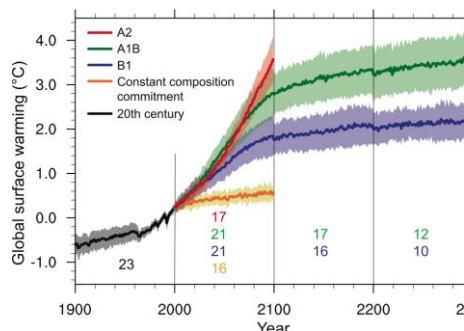
*Karen O'Brien
Department of Sociology and Human Geography
University of Oslo, Norway*

Global
change
research



Three Decades of Global Change Research

- ▶ Extraordinary progress in understanding the Earth System and consequences of human action
- ▶ Global environmental changes outpacing responses
- ▶ Current path is unsustainable
- ▶ Sound basis for actions to mitigate and adapt to global change; and reason to consider transformations that are ethical, equitable and sustainable.



Need far more information and understanding to solve the problems that global environmental changes pose to humanity

RESCUE Vision: An open knowledge system

- ▶ Integrative research
- ▶ Integration of knowledge
- ▶ Collective problem framing
- ▶ Plurality of perspectives
- ▶ Better treatment of uncertainty and values
- ▶ Extended peer review
- ▶ Broader and transparent evaluation metrics
- ▶ Dialogue processes
- ▶ Societal agenda setting
- ▶ Stakeholder participation

Interdisciplinarity → Transdisciplinarity



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ICSU Visioning: The Five Grand Challenges

- ▶ Forecasting
- ▶ Observing
- ▶ Confining
- ▶ Responding
- ▶ Innovating

Earth System Science for Global Sustainability
The Grand Challenges

ISSC
International Council for Science

ICSU
International Council for Science

(Science 12 November 2010: 916-917)

The Belmont Challenge: *To deliver knowledge needed for action to mitigate and adapt to detrimental environmental change and extreme hazardous events.*

- Assessments of risks, impacts and vulnerabilities, through regional and decadal analysis and prediction
- Information on the state of the environment, through advanced observing systems
- Interaction of natural and social sciences
- Enhanced environmental information service provision to users
- Effective international coordination mechanisms



'Future Earth' Research for Global Sustainability

- ▶ A new global endeavor to focus Earth system research on global sustainability;
- ▶ Integrates our understanding of the global risks facing humanity;
- ▶ Explores new opportunities for partnerships and alliances among researchers, scientific organizations, and research users;
- ▶ Emphasizes the co-design of a 10-year integrated research agenda.

'Future Earth' goals

- ▶ A transdisciplinary enterprise co-designed in an alliance;
- ▶ Reorganizing the entire global environmental change research structure, and the way of doing research;
- ▶ Integrating the understanding of how the Earth system works to find solutions for a transition to global sustainability.



‘Future Earth’ design criteria

- ▶ Focus on research for global sustainability
- ▶ Partnership between researchers, funders, services, users
- ▶ Strong regional nodes
- ▶ A cutting-edge network
- ▶ Active engagement with decision-makers
- ▶ Involvement of full range of disciplines
- ▶ Active engagement of new researchers

”Additional capabilities are needed...”

- ▶ Humility and openness towards other systems of thought, worldviews, and other sources of knowledge;
- ▶ The ability to listen to others.. in real dialogues;
- ▶ Focus on creating connections;
- ▶ Enthusiasm and ability to learn, rather than impose knowledge;
- ▶ Supporting the empowerment of people... through collaborative and transformative learning.

RESCUE Synthesis Report 2011, p. 33

From grand challenges to deep challenges...

"It is necessary to acknowledge the deeply embedded norms and power relations of the knowledge systems in which we currently operate"

"Processes of change cannot be programmed in explicit steps with defined outcomes"

(RESCUE Synthesis Report 2011)

'Future Earth' represents an opportunity for approaching science for sustainability in a new way.