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World Social Science Report

2013

Changing Global Environments

Summary

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Human Elephant Foundation

The artist and creator of the elephants in this Report, Andries Botha, formed the Human Elephant Foundation which initiates and facilitates discussion and innovative problem solving for a more respectful and sustainable world.

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You can buy my heart and my soul, 2006 by Andries Botha
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Introduction
Social sciences in a changing global environment

The International Social Science Council (ISSC) is proud to present the *World Social Science Report 2013*. The issue this Report confronts is global environmental change, a phenomenon that encompasses all the biophysical changes happening on the planet's land and in its oceans, atmosphere and cryosphere. Many of these changes are driven by human activities such as fossil fuel consumption, deforestation, agricultural intensification, urbanization, over-exploitation of fisheries, and waste production. By far the most discussed global environmental change is climate change, one of the biggest global challenges that humanity faces. These challenges are intimately connected to accelerating production and consumption, population growth, socio-economic and cultural globalization, and widespread patterns of inequality. Together they comprise a major feature of contemporary life, and require innovative policy and social transformation.

Why a social science report on global environmental change?

Global environmental changes have potentially grave consequences for the well-being and security of people all over the world. Many already recognize the urgency of environmental changes as they interact with and exacerbate other social, economic and political crises. Poverty, inequality and sociopolitical discontent create uneven vulnerabilities, and unequal options for response to environmental change. The challenge that society now confronts is to secure a sustainable world through effective responses to today's interacting processes of environmental and social change.

Global sustainability requires concerted action to protect the planet's bounty and, simultaneously, to safeguard social equity, human dignity and well-being for all.

The *World Social Science Report 2013* picks up this challenge by showing the essential contributions that the social sciences can and must make to the integrated thinking and responses it requires. The Report issues an urgent and decisive appeal to the social sciences[1] to intensify research on the human causes, vulnerabilities and impacts of environmental change, and to inform responses to the sustainability crisis. It urges social scientists to work more closely with each other, with colleagues from other scientific fields, and with multiple stakeholders and users

1. *Throughout this Report, and in line with the ISSC's scientific membership base, reference to the 'social sciences' should be understood as including the social, behavioural and economic sciences.*

of science to deliver credible and legitimate knowledge for real-world problem solving.

There are three defining attributes of today's changing global realities that require the social sciences to rethink how we understand and address the problem of global environmental change.

The inseparability of social and environmental systems and problems

Environmental problems cannot be separated from the other risks and crises that comprise current global realities. They are not disconnected challenges; they do not occur in discrete, autonomous systems rooted in the environment on the one hand, or in society on the other. Instead, they are part of a single complex system. Global environmental change is simultaneously an environmental and a social problem. Social science research helps us to comprehend the complex dynamics of 'social-ecological' or 'coupled human–natural' systems, and can help explain how these systems unfold and interconnect across space, from the local to the global, and in time, from the past and present into the future.

A human condition without precedent

Humans are living at a time when the Earth's land surface and climate, its elemental cycles, oceans, fresh water, ice, air and ecosystems, have all been altered fundamentally from the state they were in even just a few centuries ago. Scientists now know with great confidence that these changes are attributable primarily to human activity. Indeed, the 'Anthropocene' is increasingly regarded as a new geological era in Earth's history, one in which people take centre stage as the defining geological force. This makes the causes, consequences and responses to global environmental change fundamentally social in nature. Global environmental change is about humans changing global environments, and about humans, individually and collectively, shaping the direction of planetary and social evolution. The social sciences therefore have a vital role in enriching society's understanding of what it means to live – and maybe thrive – in the Anthropocene, and in raising awareness of the opportunities, accountabilities and responsibilities this brings with it.

Urgent and fundamental social transformation

Given that planet's systems are under rapidly growing and unsustainable pressures, and that human systems are inextricably linked to their fate, human security is clearly at stake. If societies are to maintain or establish such security, and successfully pursue together the larger quest for global sustainability, deep social transformation is needed. The social sciences are uniquely placed to clarify what this means, and what role science can play in finding solutions. Through engaged research, they can help society as a whole understand the changes required at individual, organizational and systemic levels, and how such changes could be realized in politically feasible and culturally acceptable ways.

Given these features of today's global realities, the case for greater engagement by, and attention to, the social sciences is clear. Their knowledge is indispensable in the search for a clearer understanding of the causes and consequences of global environmental change, and for informing more effective, equitable and durable solutions to today's sustainability challenges. This is what makes the *World Social Science Report 2013* on global environmental change both relevant and timely.

The social sciences provide indispensable knowledge of the causes and consequences of global environmental change, and of more effective, equitable and durable solutions to today's sustainability challenges.

Objectives of the Report

The Report has five specific objectives:

- To develop a social science framing of global environmental change and sustainability;
- To showcase some unique contributions that the social sciences can make, taking different disciplinary and interdisciplinary perspectives into account, and writing from or about different regions of the world;
- To explore and assess how well social science knowledge about changing global environments is linked to policy and action;
- To influence research programming, science policy making and funding, at national, regional and international levels; and
- To mobilize the wider social science community to engage more effectively, and take the lead in developing a more integrated and transformative science of global change and sustainability.

The more than 150 authors of this Report, drawn from across the globe and representing a wide range of disciplinary and interdisciplinary perspectives, all speak in their own voices to these objectives.

The context for the Report: a changing environment for global environmental change research

Systematic research on global environmental change by social, behavioural and economic scientists dates back to the 1950s. Today environmental problems, particularly climate change, are acknowledged research domains in most social science disciplines. But despite these efforts, the social sciences have remained marginal to global environmental change research in the post-war era. The field continues to be dominated by the natural sciences.

Today, environmental change research aims more than ever to integrate the social, natural, human, engineering and health sciences. In this context, integration does not imply the loss of disciplinary strength or identity. On the contrary, it means being confident in one's disciplinary base and engaging with colleagues from other disciplines and fields in the joint, reciprocal framing of problems, and in the collaborative design, performance and application of research.

The call for more integrated science is dictated by the complexity of the environmental and sustainability challenges that society faces, and the inability of any single discipline or scientific domain to understand, let alone address, this complexity. Despite the progress made by many academic groups and scientific institutions across the world, the task of bringing the different sciences together in integrated global change research remains difficult. Much work remains to be done to clarify what integration means in practice, find effective ways of realizing it, and adjust institutional practices to support it.

No single discipline or scientific domain can understand, let alone address, the complex challenges involved in environmental change and sustainability.

Such work is now being undertaken by Future Earth,[2] an ambitious new international programme of research for global sustainability that has been established by an alliance of international organizations including the ISSC.[3] Future Earth provides a unique and robust institutional basis for accomplishing something that has long been called for: research that brings the various scientific fields together on complex, multi-faceted problems. In addition, Future Earth fosters knowledge production, guided by a vision of science working with society to find solutions for global sustainability. This approach defines the context within which the *World Social Science Report 2013* has been prepared, and within which the challenges it poses to the social sciences must be understood.

The framework for the Report: transformative cornerstones of social science research for global change

What do the social sciences bring to integrated global environmental change research? What unique contributions can and must they make to delivering solutions-oriented knowledge for global sustainability?

In 2012 the ISSC developed a research framework comprising six transformative cornerstones of social science research for global change.[4] Each cornerstone articulates a set of social science questions that have to be answered if research on concrete environmental problems is to inform actions that result in ethical and equitable transformations to sustainability. Together, they provide tools for understanding climate and other environmental changes as social processes, embedded in specific social systems, and for critically questioning and rethinking those processes and systems through time.

The six transformative cornerstones (see Figure 1) form the thematic framework for the *World Social Science Report 2013*.

Figure 1 • The transformative cornerstones of social science research for global change

Source: Adapted from Hackmann, H. and A.L. St. Clair (2012), Transformative Cornerstones of Social Science Research for Global Change. *International Social Science Council (p21).*

2. *www.futureearth.info/*
3. *www.stalliance.org/*
4. *www.worldsocialscience.org/documents/transformative-cornerstones.pdf*

Structure of the Report

This framework is also reflected in the structure of the Report. Part 1 sets the stage by introducing social science perspectives on the big-picture complexities of global environmental change and sustainability. Part 2 augments this with a review of social science capacity and research in different regions of the world. Parts 3 to 4 then take on each of the cornerstones in turn. Part 3 highlights selected consequences of global environmental change while Part 4 focuses on visions and conditions for change and on sense-making. Part 5 picks up the difficult topic of ethics and responsibilities, and is followed by Part 6 which addresses the important issue of governance and decision-making. Part 7 provides an overview of the contributions made to global environmental change research by ISSC members, programmes and partners. These many and varied contributions are not further synthesized here in this Summary, but offer important examples of how multidisciplinary teams can advance the knowledge base in important ways. They should be seen as important inputs to, and foundations for, the efforts expected under Future Earth. The final part discusses the wider findings and messages of the contributions to this Report, and identifies priority actions for responding to the challenges that it identifies.

Development of the Report

The ISSC developed this Report as part of its strategic partnership with UNESCO and under the guidance of a Scientific Advisory Committee composed of renowned scholars from different scientific disciplines and from all parts of the world. Contributions were solicited via a global call, and some were commissioned by the Report's Editorial Team to cover gaps in coverage. The ISSC also invited its regional social science councils and professional disciplinary associations, unions and cosponsored programmes, as well as UNESCO and the Organisation for Economic Co-operation and Development (OECD), to prepare brief overviews of their contributions and accomplishments in global environmental change research.

All commissioned and invited contributions were submitted for external peer review. Throughout the selection and commissioning process, attention was paid to the geographical, gender and disciplinary distribution of the more than 150 authors of this Report.

Audiences for the Report

The Report has been prepared with multiple audiences in mind. Social scientists themselves are the first audience. So are colleagues in the natural, engineering, medical and human sciences concerned with global environmental change and sustainability. Both need to reach out to the other, and this in turn will be easier if they find support from the other intended audiences of the Report. These include international science councils such as the ISSC and the International Council for Science (ICSU), the professional associations they bring together, global programmes, especially Future Earth, and international organizations including UNESCO and other relevant UN agencies. Then there are universities and academies in all fields of science, and the agencies and foundations that finance and evaluate research at the international, regional and national levels, both in the public and private sectors. This Report also aims to speak to those who might look towards and work with the social sciences to produce more usable knowledge and new insights: decision makers, policy shapers, practitioners, civil society organizations, and the media and other communicators of science.

Moving forward

The Report does not represent a single, unified social science voice, nor should it. And while it makes an effort to discuss some of the biggest problems of global environmental change and the challenges it raises for contemporary society, it cannot cover everything. The contributions reflect current preoccupations and trends in a constantly changing and expanding area of work, and social scientists' existing and growing capacities to pursue them. It is indicative of past accomplishments but does not limit future possibilities. The field is growing, wide open, and rife with opportunity to broaden and deepen what social scientists can contribute to the topic of global environmental change and sustainability.

Contents of the Report

Changing Global Environments

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Global environmental changes, including climate change, are intricately linked to other social, political and economic crises, from poverty and inequality to social discontent. The consequences of these interacting changes are rapidly unfolding across the world and already affect our life support systems, livelihoods and lifestyles. Society must now find ways to simultaneously protect the planet's bounty and safeguard social equity and well-being for all. In this urgent quest, social science knowledge is indispensable for understanding the causes and consequences of global environmental change and informing more effective, equitable and durable solutions for a sustainable future.

In this third edition of the *World Social Science Report* 150 authors from all over the world and a wide range of disciplines offer insights that help us understand the challenges before us. The report issues an urgent call to action to the international social science community to collaborate more effectively with each other, with colleagues from other fields of science, and with the users of research to deliver solutions-oriented knowledge on today's most pressing environmental problems. It calls for a transformative social science that is:

- **bolder** in reframing and reinterpreting global environmental change as a social problem;
- **better** at infusing social science insights into real-world problem-solving;
- **bigger** in terms of having more social scientists to focus on global environmental change; and
- **different** in the way it thinks about and does research that helps meet the vexing sustainability challenges faced today.

World Social Science Report 2013: Changing Global Environments was prepared by the International Social Science Council and co-published with the Organisation for Economic Co-operation and Development (OECD) and UNESCO.

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