

## The Social at the Heart of Global Environmental Change

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***The environmental challenges that confront society are unprecedented and staggering in their scope, pace and complexity. Unless we reframe and examine them through a social lens, societal responses will be too little, too late and potentially blind to negative consequences.***

The debate on global environmental change is shifting from a predominant focus on biophysical processes to a focus on societal processes and concerns interacting with the climate and environment<sup>1</sup>. As the growing importance of the IPCC's Working Group II and III in AR5 clearly show, critical issues like food production, the reduction of emissions, transformation of energy systems and land use change are human concerns that put people at the heart of climate challenges.”

More prominently than ever before, the IPCC report offers an end-to-end picture of what climate change means for societies and natural systems, and why we should be concerned about possible imminent humanitarian emergencies. The report pays close attention to what an increase in average global surface temperature of up to 4°C might look like; it assesses our current understanding of how to reduce the risks of the dramatic and catastrophic impacts this rise in temperature may cause<sup>2</sup>. The report's message is clear: we still have time to prevent the most dramatic changes and have many options to reduce the risks – with adaptation, mitigation and equitable sustainable development approaches<sup>2,3</sup>. This window of opportunity, however, is closing in on us and will require major reductions in carbon dioxide emissions initiated within the next ten to fifteen years. Most environmental trends are negative, accelerating, and in some cases mutually reinforcing; the consequences of these changes are real and unfolding now, affecting individuals and communities everywhere.

Importantly, people and societies are no longer viewed as external to (or merely a simplistic black box within) the Earth system but as an integral and differentiated part of it – creating the problems and holding the key to their solution. Specific contexts – be they geographic, cultural or personal – matter in how drivers and responses unfold. Equally important are the many other challenges that affect those contexts<sup>4,5,6</sup>. The interaction of climate change problems with social crises such as poverty, multidimensional inequalities and growing social discontent, and the inevitable trade-offs across communities, sectors, space and time all make climate change a wicked problem<sup>7</sup>.

This is the Anthropocene<sup>8</sup>. But this recognition poses more questions than answers; questions about fundamental human responsibilities and opportunities that call on the social sciences to conduct analyses, offer interpretation and help society create meaning.

The reframing implied in the narrative of the contributions to AR5 is articulated in the World Social Science Report 2013<sup>9</sup>. Demanding a bolder, more creative, and integrated social science, the report offers three main messages that point us to how we may build the capacity for meeting the challenges laid out in the AR5. The social sciences must help to fundamentally reframe climate and environmental change from a physical into a social problem. They must be much more engaged with policy-makers and society and become key players in the quest for solutions that work for the benefit of people and

the planet. And the social sciences must become more open to new ways of producing and sharing knowledge to reach policymakers, businesses, and civil society before the window of opportunity closes. This is echoed poignantly in the perspective offered by Weaver and colleagues, focused on the US global change science context specifically, but just as applicable elsewhere<sup>9</sup>.

It all begins with the way we think about the challenges before us.

### **The social nature of global environmental change**

It is remarkable that we keep thinking of problems that are caused by humans, that inflict harm on humans (and the life support systems on which they depend), and that can only be solved by humans, in terms of their biophysical nature – as matters of molecules, shifts in atmospheric dynamics or ecosystem interactions, imbalances in elemental cycles, or merely as collapsing environmental systems. Clearly, the problems we face are all these things. But we should not assume that lay audiences and policymakers see the relevance of these global challenges to daily decisions and actions, or that humans grasp the implications of these issues in terms of how to change policy or take new, more relevant decisions. Likewise, we should not assume that such framings will arouse the passions of those less fascinated by science, less inclined to think long-term and in systems, or less aware of the acute human dependence on stable, functioning natural systems.

Of course, framing is not the only thing that needs to change to get people's attention and motivate action. But we believe an essential ingredient for success would be to reframe the issues at stake in terms that put humans at the centre of global environmental change – for three fundamental reasons<sup>10</sup>.

First, we can no longer disentangle social and environmental systems and problems; they are inseparable. Secondly, in the Anthropocene, humans are fundamentally and massively altering planetary systems from the state they were in just a few centuries ago – a remarkable and unprecedented condition of human existence. And third, in response to the challenges before us, society will have to either seek out deliberately, or be subjected involuntarily to, profound societal transformation.

In short, we live in the Anthropocene in which humans collectively exert geological force on the planet and thereby alter its very functioning; we also live in an era in which we have – maybe for the last time – the opportunity to become truly *Homo sapiens* (wise, sensible, judicious) by being reflective, resourceful, and in all our actions, responsible for our past, present and future<sup>11</sup>.

### **How to reframe the environmental as social**

To reframe and reinterpret global environmental change as a fundamentally social process means deviating from several decades of physical science dominance of global change research. As indicated by the IPCC AR5, this is where the major gaps in research are today. The way issues are framed matters because it shapes what is perceived as important and why, and guides actions in particular directions<sup>12,13</sup>. To open up possibilities for solutions that are innovative, feasible and acceptable, we now need framings that foreground the social, political, economic and cultural nature of climate change, and prioritise people's beliefs and values, their behaviours, practices and the institutions that

guide them<sup>14</sup>. We need to understand the consequences of environmental change for peoples' everyday lives, their interpretations of such change, and their visions for possible and effective response options.

This is the focus the social sciences bring, and why they must be more centrally involved in global change research and in finding solutions.

How to reframe global environmental change in social terms is evident in the six transformative cornerstones of social science research on global change<sup>15</sup>. This knowledge framework identifies key questions we need to answer if research on environmental problems is to contribute to more effective, equitable and durable solutions. It can also help tap into societal concerns and human passions in unprecedented ways and mobilize humans for their own future in constructive ways (Box 1).

[insert Box 1 here]

### **Making it practical**

The framing of these issues through a social lens should not, however, simply transfer from one domain of science to another. Finding effective, durable solutions to climate and broader environmental changes requires the joint efforts of experts from all domains of science with decision-makers and stakeholders. But this does make social science knowledge indispensable knowledge and calls for leadership from the global social science community. What does that mean in practice? We highlight six priority action steps from the *World Social Science Report 2013*.

First, social scientists, along with their funders, and those who shape science policy, should promote the understanding that global environmental change is a priority domain par excellence of the social sciences. Second, research funders, scientific institutions, international councils and associations and research teams need to ensure that social scientists are included from the beginning in research projects to identify and frame socio-environmental priorities, to ensure the success of a solutions-oriented, integrated science of global change for sustainability. Third, social scientists, wherever they work, should respond proactively to the ever-growing demand for social science knowledge on global change and sustainability, and take the lead in deepening our understanding of key concerns. They also need to develop new, and modify existing, concepts, tools and methods to better understand the dynamics of complex social-ecological systems, and reveal the connections between environmental, socio-political, economic and cultural vulnerabilities and crises. A fifth and necessary complement to the needed steps forward among social scientists is that decision-makers at all levels, in the public, private and civil sectors, prioritise the appointment of social scientists, in all disciplines, to scientific advisory bodies, expert committees and working groups intended to provide counsel on global environmental change and related policy options. And finally, this also implies a willingness among those engaged in evidence-based policy-making to recognise the validity and importance of context-sensitive and qualitative knowledge about the full complexity of the human world in their policy designs and implementation.

### **More demanding than a mere revolution**

Reframing, and the action steps listed above, constitute one key strategy alongside a broader set of changes required to integrate the social perspective more fully into research and practice<sup>10</sup> and to give the sustainability transformation a better start and a better chance of long-term success in environmental and social terms.

The picture emerging from the IPCC reports is – or should be – a deeply disturbing one. As Bruno Latour once wisely cautioned, however, just invoking an apocalypse won't do it; and, indeed, the change needed in the social and neighbouring sciences, as well as in broader society is more demanding than instigating a revolution<sup>16</sup>. We will need a far longer breath. Framing, as was recognised four decades ago<sup>17</sup>, directs and organises our attention. If physical frames obscure the human causes, impacts and solutions, then reframing environmental change as quintessentially social is a fundamental, strategic act that shapes what we perceive and everything we might do. Why would we do any less for our future?

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## Textbox 1:

### **Box 1: The Six Transformative Cornerstones Framework: Social Frames for Global Environmental Change**

#### **Cornerstone 1: Historical and Contextual Complexity**

What are the interconnected drivers of global change, the historical trajectories that have led to the current situation, what are the interdependencies of peoples' vulnerabilities to these and other social processes, and how do risks, impacts, perceptions, experiences and responses differ across the world, across social classes, gender, race, or faith, and between personal or professional identities?

#### **Cornerstone 2: Consequences**

What are the current and future threats from global environmental change and their impacts on people and communities, and what are the diverse realities of living with such change?

#### **Cornerstone 3: Conditions and visions for change**

How does social change – at the individual and collective levels – happen, and what directions might it take? What kind of leadership and other capacities are required for successful change to occur?

#### **Cornerstone 4: Interpretation and subjective sense-making**

What are the values, beliefs, interests, worldviews, hopes, needs and desires that underlie people's experiences of and responses (or lack thereof) to global change? What shapes the personal narratives and social discourses about the nature of the world and the environment, and thus people's views on the necessity for a transformation?

#### **Cornerstone 5: Responsibilities and ethics**

What does it take to foster global and intergenerational solidarity and justice? What are the obligations, duties and responsibilities to poor and vulnerable people, to future generations, and to the other-than-human environment?

#### **Cornerstone 6: Governance and decision-making**

How are decisions made in the face of uncertainty? What pathways are available for influencing policy-making? What determines the success or failure of political agreements? And what drives political will?

Source: Hackmann, H. & St. Clair, A.L. *Transformative Cornerstones of Social Science Research for Global Change*. (International Social Science Council, 2012). <http://www.worldsocialscience.org/documents/transformative-cornerstones.pdf>