



## What is Asked of Us: A Clarion Call to Scientists at an Urgent Time

Susanne C. Moser

In a recent contribution to this newsletter that introduced and discussed the revised IHDP strategic research plan,<sup>1</sup> I applauded the organisation's explicit call to better connect human dimensions science with the world of management and policy-making.<sup>2</sup> Soon after, I had the opportunity to witness first hand one of the ways in which IHDP plans to implement this strategic goal: the science-policy dialogue in Santa Barbara, California on Energy, Sustainability and Societal change, thoughtfully organised by Ernst Ulrich von Weizsäcker, Oran Young, Andreas Rechkemmer and their colleagues. After two days in the company of some of the smartest people in our field, I sensed once again the great urgency for action on our collective knowledge and caring, for carefully wetted wisdom about energy and climate change and for the magnitude of the policy and behavioral changes needed to address the interrelated climate-energy-sustainability challenges adequately. The irony of participating in a science-policy dialogue in which scientists talked almost exclusively amongst themselves, with only one representative of the policy world, Marty Blum, the Mayor of Santa Barbara and only one from the world of communication, Mia Navarro, New York Times reporter, both present for a couple of hours, only heightened that urgency.

To be fair, things didn't pan out that way for want of trying. IHDP staff made valiant efforts to invite practitioners and accommodate their schedules, yet commitments remained tentative and in the end we had a great workshop on

what could and should be done... without an audience. Maybe no other outcome could have made more apparent how difficult it actually is to forge not just a one-time science-policy dialogue but an ongoing relationship between researchers and practitioners. Maybe no other constellation could have put the question back to us more pressingly: What is asked of us? What changes do we human dimensions researchers really need to make to connect our scientific understanding to the policy and decision makers with the power to act on it?

### The Persistent Disconnect

The juxtaposition of insights and action was stark and classic. On the one hand, the urgency emerging from the clearly established scientific trends in energy consumption, economic development and climate change (see the article in this newsletter by Ernst Ulrich von Weizsäcker) well understood by the scientific intelligentsia present in the room. On the other hand, two radically different sets of policy actors: those who are already deeply engaged, clearly in a hurry to develop policy responses and who need very specific, decision-relevant information from scientists and those who have yet to be mobilised to even begin thinking about the tremendous challenges ahead. A handful of engaged scientists is trying to help the impatient former, yet can't always provide answers unambiguously or fast enough, as made

apparent by excellent keynote presentations by Frans Berkhout and Carlo Jaeger. Most can't be bothered to engage in efforts to reach out to the recalcitrant latter. Between those two extremes are the many, willing policymakers who, in 2008, still ask frighteningly fundamental questions such as, "is the sea level really rising?" yet can't get that answer from the experts at their local universities. For reasons long and well understood including cultural norms, institutional policies and disincentives, linguistic disconnects, differences in working style, self-perception, time constraints, purpose and persistent misperceptions about the needs and capabilities of the other side, scientists and practitioners continue on their respective courses like ships in the night, never meeting to match potentially relevant science with pressing policy decisions.<sup>3</sup> Unfortunately, providing effective scientific decision support is still not the *modus operandi* of most scientists. The few that do, already struggle, and are likely to not keep pace with a rapidly increasing demand for answers.

### The End of Business as Usual

The question thus begs to be asked: If we took our own scientific findings about the state of the climate and biosphere really seriously, or maybe not just seriously, but personally, would we not have to act differently in our own work? In light of the urgency of accelerating global change processes, can we afford to continue to do our science as most of us have always done in distant isolation from policy and decision-makers? And if we were inclined to modify our own ingrained habits of working and willing to step outside our comfort zones of<sup>3</sup> the walls of the ivory tower, then exactly how would we conduct our science differently? How would we need to change and tackle the obstacles that obstruct change, to work more effectively with decision-makers? What do we know from our own human dimensions research about how to affect change?

Similar questions could be asked for the needed changes in the world of policy and decision-making. I will not ask them here, important complements as they may be, because my goal is to critically probe our own professional conduct, or that of the world of science. Clearly, for science and decision-making to better connect, changes are needed within academia and the world of practice, leading ultimately to more frequent, longer-lasting, and more effective interactions at the science-policy interface.

### Affecting Change in Our Midst

Based on the insights gained from the social studies of science and the emerging science of decision support in addi-

tion to years of working at and studying the science-practice interface myself, I offer seven challenges to us in academia.

#### *Adopting a Learning Orientation*

As our own actions hurl us ever more quickly into a world that is, itself, changing rapidly, what we thought we already knew yesterday may no longer apply or work tomorrow. That means we need to adopt, as the most basic stance in our work, a learning orientation as maybe the only guarantee against hubris in the face of the fundamental uncertainty about where we are headed. Definitions of professional achievement must not just reflect what we know and have accomplished, but our willingness and humility to not know and learn from and with others. Of course, scientists already prize themselves for being constitutionally learning-oriented, always interested in pushing back the frontiers of knowledge, always looking for the new. But are we really? In the world of information overload, many of us complain about the lack of space and time to "really" think and explore new areas of interest. Moreover, the truly difficult issues that need addressing, as many have recognised, are interdisciplinary, but how many of us spend time in the aisles of the library that hold the journals of other disciplines? Since the advent of Google Scholar and other web-based search engines, it seems "crossing the aisle" has become easier, but our attention span past the first few screens, it seems, has simultaneously diminished, leading us to call on a diminishing breadth of often only more recent intellectual insights.<sup>4</sup>

#### *Understanding, Connecting, and Intervening at Multiple Scales*

We have important insights from a range of disciplinary and interdisciplinary efforts that change in terms of the ecological, geophysical or social is multi-scalar, with so-called slow variables controlling large-scale features of a system and typically more difficult to change, faster, and more easily impacted variables controlling smaller-scale processes. Between them are cross-scale connections that work in both directions to affect the dynamics of the entire system.<sup>5</sup> Federal laws such as a yet-to-be instituted national mechanism in the US to reduce carbon emissions tend to be slow to emerge, and once in place, hard to fundamentally change or remove. Yet their reach is broad, influencing state and local actions, businesses and entire sectors. Distributed experiments with legal or market mechanisms can be instrumental, in turn, in shaping which federal mechanism gets adopted nationally. To support societal change toward sustainable energy futures and climate-resilience, understanding the slow and fast variables as levers that can be moved to help accelerate and move us toward desirable change, and to understand the cross-scale

and cross-sector interactions between them is a daunting research challenge. Yet identifying the most policy-relevant and urgent research questions cannot be done by scientists alone, but should be done in collaboration with decision-makers. Focussing our research and outreach on just one scale is incommensurate with the problems that need solving.

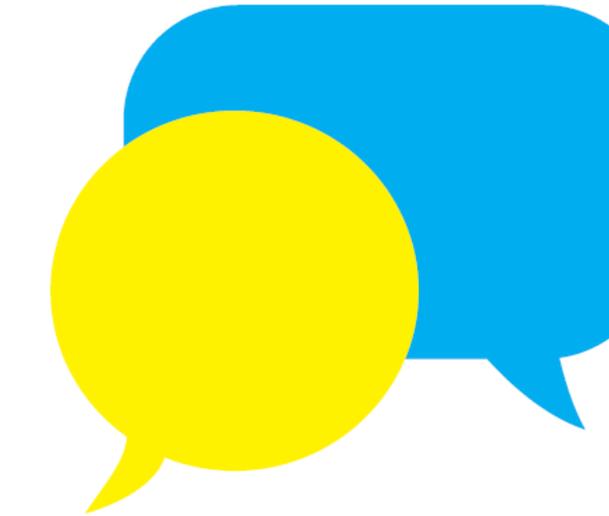
#### *Courage to Do Unusual Business*

Ending business as usual, does not mean ending business. It means doing unusual business. For scientists, this may entail stepping more often outside the ivory tower and approaching local, state or national decision-makers to jointly explore possible areas of decision support. Learning from colleagues already engaged in the world of practice or with the public on how to interact, communicate and engage most effectively would be a great first step. There are “best practices” in decision support and communication that most of us did not learn in graduate school. There is no need or time to reinvent the wheel! (See, for example, the forthcoming NRC report on Strategies and Methods for Climate-Related Decision Support).<sup>6</sup>

Unusual business may also imply doing even more difficult things than we already attempt, for example, slowing down in the face of great urgency. This may mean slowing down long enough to rethink curricula and educate students, the future researchers and decision-makers, in skills that may be highly sought after in an increasingly challenging world such as communication, facilitation, conflict resolution and creative problem solving systems as opposed to narrowly disciplinary or symptomatic thinking. Or slowing down enough to self-reflect and make the difficult changes in our own professional behaviour.

#### *Opening Up Space for Difficult Dialogues*

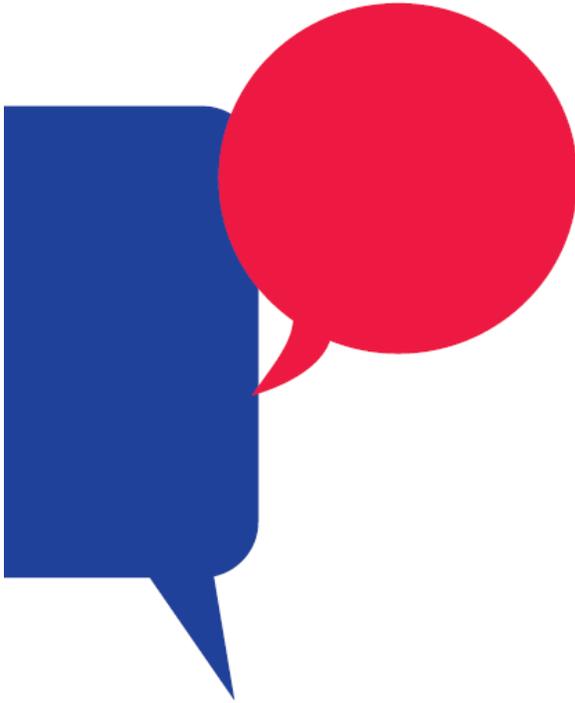
In a rapidly changing world, we will face mounting challenges, some too difficult to even put on our mental, much less political agendas. Examples range from changes that may be needed in treasured pieces of legislation such as endangered species protection, flood insurance, refugee policies and even basic constitutional tenants, to various forms of self-regulation that we may need to accept (and at what price?) if we are to move to a low-carbon future, to the possible realignment of personal and public rights and responsibilities in the social contract we have with each other. And these are just the “peaceful” examples. To manage such difficult changes over long periods of time, for instance, multiple generations as opposed to issue attention cycles, a business quarter, the length of a campaign, an election term or even a career, we will need compelling, positive visions to sustain us. Thus, as one possible democratic stop-gap measure in a world quite



possibly pressured into more technocratic, less democratic and faster decision-making, we need to create open fora for public dialogue. Some of these will be educational, others creative and constructive and yet others potentially controversial, full of conflict or even explosive. These will be, in short, difficult dialogues. Few of us are skilled in participating in such dialogues, much less facilitating them. Yet we need them, and urgently so. Universities are well positioned to open such fora, yet we must acquire the skills to facilitate them. Just providing knowledge, even if communicated well, without offering spaces to discuss the implications, will no longer suffice. If sustainability were something we could achieve by holding hands and singing “kumbaya” despite all our differences, we’d already be there!

#### *Re-Designing Feedback into Our Systems*

Feedback is the essential element in any system that regulates its behaviour over time. Professional rewards and promotion criteria “regulate” our work life. It’s been said many times that the feedback system in place for academics, despite numerous calls for public engagement and interaction with the potential users of information, simply does not encourage such interaction, and in fact, can punish us for doing so, especially pre-tenure. Similarly, society has far too many incentives that encourage or allow the reckless use of energy, fossil fuels and natural resources, and far too few or only with much delay that tell us that such behaviour is ultimately life-threatening and self-defeating. It is a high priority for



research to help identify, measure, and communicate new, more appropriate indicators of environmental and societal change that shorten the distance between what we do and what impact such behaviours have socially and environmentally. Since the lag times in human and climatic systems are naturally long, we need meaningful feedback more quickly and more often, to redirect our behaviour. We also need indicators of positive change, as it unfolds, especially because the global environment will not be giving us positive feedback for all our hard efforts any time soon. Thus, a critical role for human dimensions researchers, again, in collaboration with university administrators, decision-makers, and the public, is to identify what feedbacks are important in producing certain behaviours and then help reset, remove or replace them. Not the least will be the feedbacks that will induce us to become researchers interested in working with practitioners and conducting use-inspired science.

#### *Taking on Leadership Wherever We Are*

Theories of social change abound, ranging from individual behavioural change to deep cultural change. Accordingly, the internal and external factors that bring about change vary widely. Few changes come to be in which someone does not eventually step up to the plate and change the context in which we function or does not take a risky step, take advantage of an opportunity, model new behaviour, practice an in-

novation or put in place a new rule. Leadership in this sense is not limited to those at the top. It refers to being a leader wherever we are. Whether we are scientists, administrators in academia or whether we work in the world of practice, the dual imperative of leadership is to help increase the motivation and intention to change, while removing or reducing the barriers that keep us stuck where we are and doing “what we’ve always done”. Continuing what we’ve always done will get us exactly where we’re headed.

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Space for the unknown is what this header means. The seventh challenge is to make room for not knowing, for what is yet to emerge complete with more problems and unimagined solutions. It calls on us to expect surprise. It stands for the intention to make room for human ingenuity and creativity. It returns us to a sense of humility that underlies the learning orientation mentioned above. It is also the space for the wisdom that is greater than that of any one of us alone. And it reflects the recognition that less is sometimes more. It is meant as a visible reminder of the need to make room for the voices missing from any discussion. As such, it is maybe the most uncomfortable of the challenges posed here. It is the space needed for listening into the silence when we ask ourselves, each of us individually: What is asked of me?

Susanne Moser, Susanne Moser Research & Consulting, Santa Cruz, CA, [promundi@susannemoser.com](mailto:promundi@susannemoser.com) and Research Associate, University of California-Santa Cruz, Institute for Marine Sciences.

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5. See, e.g., Cash, D.W. and S.C. Moser (2000). Linking local and global scales: Designing dynamic assessment and management processes. *Global Environmental Change* 10: 109-120. Or: Urwin, K. and A. Jordan (2008) Does public policy support or undermine climate change adaptation? Exploring policy interplay across different scales of governance. *Global Environmental Change* 18: 180-191.
6. See Footnote 4.