



Delegates attend the opening of the UNFCCC's 10th Conference of Parties (COP10) in Bali, December 2007. The UNFCCC has become a platform for discussing global climate change and policy options in the world stage.
Photo: MySpace/1/00606

A New Charge: Engaging at the Science-Practice Interface

Suzanne C. Moser

At the core of the International Human Dimensions Program's (IHDP) revised mission are two goals that explicitly focus on the interaction of the human dimensions scientific community with the world of policy and practice, namely:

- To strengthen the capacities of research and policy communities [to gain] a shared understanding of the social causes and implications of global changes, and
- To facilitate dialogue between science and policy.¹

For the first time, the IHDP addresses these goals explicitly in its new strategic science plan for the coming decade.² In fact, facilitating exchange and dialogue across the science/policy divide is one of the three strategic legs of the IHDP "stool," with cutting-edge research and capacity development forming the other two. This elevation of communication, outreach, and interaction between scientists, policy-makers, practitioners, and various publics to unprecedented prominence is also reflected in the concept note guiding the

7th Open Meeting in New Delhi, India, which observes that the human dimensions research community has evolved significantly in recent years, shifting its focus

"from [merely] understanding the dynamics of global environmental change to using that understanding to devise ways to meet the challenges that we see emerge. This has pushed the scientific community to pay more attention to the relationship between science and policy, to include more aspirational and policy-relevant research, and to improve communication with government, business, NGO's and the civil society at large."³

At the beginning of the next IHDP decade thus stands a new (and welcome) mandate that asks members of our research community to consider more seriously the ways in which our research can be made more policy and manage-

ment-relevant, to engage with practitioners in shaping the research agenda, identify policy-relevant outputs and ensure delivery to relevant publics, and to explore, build, and seek more deliberately the forums and pathways for exchange and collaboration with those in positions to put our insights to practical use.

This bold call for active engagement and practical relevance may not come as a surprise – especially after the award of the 2007 Nobel Peace Prize for the scientific and outreach efforts of the Intergovernmental Panel of Climate Change and former U.S. Vice President Al Gore. Nor is it astonishing to those who have been involved for decades in such work, or to those who have contributed to the growing understanding of effective communication, decision support, and science-practice interactions. In the relatively conservative halls of academia, however, this overt sanctioning of engagement between scientists and non-scientists is far from mainstream, and much less wholeheartedly embraced and supported by academic social norms, reward systems, or graduate training. Clearly, such engagement is also not free of challenges and controversy.

This article tries to roughly chart this science-practice territory in the context of social science global change research, highlights the need for engagement but also some of the potential pitfalls, and suggests ways to successfully further the goal of effective science-policy dialogue and interaction in the next IHDP decade.²

The Need for Science-Practice Interaction and the Special Role of the Human Dimensions Community

Whether the issue is large-scale transformation of our industrial systems, poverty reduction in developing countries, technological leap-frogging in rapidly developing nations, local vulnerability reduction and adaptation in the face of increasing climate disruption, establishing effective governance mechanisms for the management of small-to-global scale social-ecological systems, or achieving the Millennium Development Goals in the face of environmental degradation and social disruption – the human dimensions (HD) research community holds important insights in each of these areas. At the same time, as IHDP Scientific Committee chair, Orrin Young states,

“Policy makers at all levels need better knowledge of the demographic, economic, institutional, and technological roots of behavior leading to increases in emissions of greenhouse gases and the destruction of

*ecosystems essential to the survival of species. They also need a clearer picture of the determinants of human responses – both individual and collective – to global developments like climate change and the loss of biodiversity. Above all, they need a better understanding of the dynamics of the coupled human-biophysical systems that give rise to global environmental change and constrain efforts to deal with their consequences.”*³

Clearly then, the increasing need and active seeking of scientific input from the practitioner community, and the availability of potentially relevant scientific knowledge and willingness of researchers to engage beyond the ivory tower await for a “match made in heaven.” But are they really?

Sarewitz and Rielke⁴ and McNie⁵ in recent commentaries and reviews of the pertinent literature suggest that there often is a compelling case and seemingly obvious fit between the demand and supply of scientific knowledge. Yet that match is rarely achieved as well as it might be – sometimes because the available science is not far enough advanced to answer the questions policy-makers need answered, and more often because scientists and practitioners do not communicate and negotiate well enough with each other what knowledge is in fact relevant or salient, and what can be produced credibly and legitimately.⁶ This begs the question why communication and interaction between scientists and practitioners either does not take place at all or so often turns out unsatisfactory.

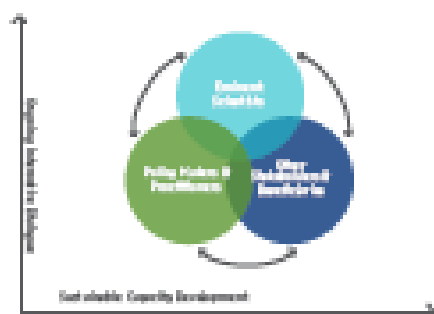
Possible Challenges and Pitfalls at the Science-Practice Interface

To be sure, the disconnect is created by both sides. Those in the world of practice (policy-makers at all levels, and public and private sector decision-makers, such as resource managers, planners, or service providers, and non-governmental and civic society actors) frequently have a limited understanding of the scientific process and may lack technical depth on any specific scientific issue. Moreover, practitioners’ professional norms and expertise are different from those of scientists, as are sources of accountability, standards of liability, and knowledge needs. And even when there is a modicum of understanding for scientists’ ways of knowledge pursuit, their need for credibility among peers, and of disciplinary or paradigmatic traditions and scientific jargon, practitioners work in very different institutional settings and

decision timeframes that can make ongoing interaction and collaboration with researchers difficult.

Scientists on the other hand, have been socialized traditionally in their professional contexts to keep a certain “objective” distance from the world of practice – one frequently perceived as being messy, political, and value-laden, where engagement potentially undermines scientific credibility. Just like their practitioner colleagues, scientists’ systems of incentives, rewards, training, accountability, and cultural norms favor interaction amongst themselves and sharing and advancing understanding within the small world of experts like themselves. While the common challenges addressed in the HD research community and in the corresponding world of policy- and decision-making increasingly require multi- and inter-disciplinary scientific and interagency collaboration, and funding sources often demand it, the hurdle to cross over the science-practice line seems even higher than that between scientific disciplines or decision-making bodies, respectively.

What results is a persistent misunderstanding of how the “other side” works, what actually is needed and possible to give, and how best to communicate and interact at the science-practice boundary. As Colleen Vogel and colleagues observed in a recent paper discussing the need for collaboration in the context of vulnerability, adaptation, and resilience,⁸ HD researchers frequently hold misleading metaphors such as “bridging the science-practice gap” by way of a unidirectional, linear “knowledge transfer” process. These simplistic mental models of what occurs at the science-practice interface do not account for the real-world, spider web-like actor networks, the ambiguity of roles, and the complexity of interactions. They also don’t help in fostering mutual understanding of needs and feasibility of knowledge production and use, and they can undermine the building of trusted relationships among those involved and ultimately may impair a productive relationship where use-inspired research⁹ does in fact serve the pressing needs of decision-makers.



HDOP helps build a strategic science-practice interface to address the data gap and improve the evidence of better science of data, get things done, and address the data divide in the U.S. and the world.

The lack of mutual understanding and simplistic notions of why and how to interact are frequently confounded by a lack of communication skills and little more than intuitive appreciation for the communication process and the need for dialogue. Not surprisingly, inadequate time and resources are often given to the interaction, frustration accrues from the repeated need for education in foundational knowledge, the slowness of scientific progress, and the seeming futility of scientists’ efforts when their input is either not (immediately or directly) used, or worse, misused in the policy process. How easy then to return to the work bench and leave the transmittal of knowledge to the world “out there” up to others, and resign to frustrated commentary on misinformed policy developments from the sidelines of action.

While a range of institutional (e.g., through so-called boundary organizations) and less formal mechanisms are being used at present to help overcome the hurdles between science and practice, the deeper change that will make science-practice interaction a “normal” practice has yet to be tackled. Through patient and persistent efforts among those already inclined to engage with practitioners, a wider sharing of lessons learned, a common canon of graduate education in the policy and communication processes and the science-practice interface, as well as hands-on practice and training in requisite skills, the HD community can position itself to play a far greater and more effective role in affecting real-world decisions in a rapidly changing world.

Implementing the Science-Practice Interaction Goals: Some Opportunities We Should Not Miss

There are several key opportunities that the HDOP, in its role as facilitator and enabler of science-practice dialogues, and individual members of the HD research community, should not miss. Each falls within the fundamental priority areas of the HDOP strategic plan for the coming decade.

First is the critical opportunity to advance our scientific understanding of the processes, practices, and circumstantial factors that make science-practice interaction both effective, the definition and measurement of effectiveness, the barriers that impede effective interaction, and insights on how to overcome them. At the same time, questions of expediency and effectiveness can not be separated from questions on the ethics of science-practice interactions. HD researchers should be actively and more broadly engaged in this serious dialogue. Such research and dialogue would have important links to broader social scientific endeavors and discourses, e.g., in the social studies of science, sustainability

INHP panel discussion at the UNFCCC by presenting a scenario on the Human Dimensions of Environmental Change. Left: Paul Brinkmann presents a title UNFCCC to INHP's side event. At center left: Paul Brinkmann. At center right: Paul Brinkmann.



science, policy sciences, or in the emerging field of decision support.

Second, the IHDP may consider as part of its capacity development efforts to focus not only on fostering substantive knowledge of IHDP program areas or building research skills, but also on educating and training both established and younger researchers in effective communication and dialogic skills to enable them to conduct audience-sensitive outreach to policy-makers and interested publics, and to work effectively with practitioners in participatory or applied settings. Model programs (e.g., the Aldo Leopold Leadership or the AAAS Science and Technology Policy Fellowship programs) exist to inform the shaping of such trainings.

Third, there is a tremendous opportunity in the planned promotion and facilitation of actual dialogues between scientists and practitioners on global change topics. The IHDP secretariat will gain invaluable practical experience with where, when, and how to foster such engagement for mutual benefit. An even greater benefit to the broader HD community may unfold if trained observers attend these dialogues and synthesize and disseminate the practical lessons for us all. Maybe more importantly, the IHDP could play an ongoing match-making role in actively connecting interested and willing HD community members to policy outreach opportunities at any level of governance, and pointing policy-makers to the tremendous knowledge resources available within our networks. Such a service may lead to deeper changes within our community than the occasional meeting of a small group of individuals or the periodic science digests for policy-makers.

Finally, the IHDP could play an influential role in contributing to a cultural shift in academia itself. As the program considers establishing a widely visible and prestigious award program for emerging scholars, it could publicly underline its seriousness about the science-practice dialogue by also rewarding those scientists who engage in such outreach ac-

tivities, and thereby help make such work a more common and respected part of the scholarly portfolio. This would also more concretely advance the envisioned goal for the next decade of fostering "a new generation of communicators able to disseminate knowledge regarding the human dimensions of global environmental change."¹¹

The course for the next decade is charted. The onus is now on us to carry out the charge!

Seamus C. Moore, GEOS Associate Researcher, Research Scientist II at the Institute for the Study of Society and Environment at the National Center for Atmospheric Research in Boulder, Colorado, USA. Contact: moose@ucar.edu

References

1. See About us at <http://www.ihdp.org/>.
2. See IHDP (2007). Strategic Plan 2007-2013: Fostering Worldwide Research on the Human Dimensions of Global Change. Bonn, Germany. Available at: http://www.ihdp.uni-bonn.de/Pdf_files/WebSitePlan.pdf.
3. See 7th Open Meeting of the International Human Dimensions Research Community in New Delhi, India, Concept Note, http://www.openmeeting2008.org/doc/concept_note.pdf, p.2, emphasis in the original.
4. This article borrows from a longer, recently published paper on this topic. See Vogel, C., S.C. Moore, R.E. Kasperson, and G.D. Dabelko (2007). Linking vulnerability, adaptation, and resilience science to practice: Pathways, players, and partnerships. *Global Environmental Change* 17: 349-364.
5. Olan R Young, Preface. In: IHDP Strategic Plan 2007-2013, p.7.
6. Sarwitz, D. and Pliske Jr., R.A. (2007). The neglected heart of science policy: Reconciling supply and demand for science. *Environmental Science and Policy* 10: 5-16.
7. McNis, Elizabeth C. (2007). Reconciling the supply of scientific information with user demands: An analysis of the problem and review of the literature. *Environmental Science and Policy* 10: 17-38.
8. Mitchell, R., Clark, W.C., Clark, D.W. and Diebas, N.M., eds. 2004. *Global Environmental Assessments: Information and Influence*. Cambridge, MA: The MIT Press.
9. Vogel, C., S.C. Moore, R.E. Kasperson, and G.D. Dabelko (2007). Linking vulnerability, adaptation, and resilience science to practice: Pathways, players, and partnerships. *Global Environmental Change* 17: 349-364.
10. Stokes, D.E. (1997). *Fastest's Quarter*. Washington, DC: Brookings Institute.
11. IHDP Strategic Plan 2007-2013, p.10