

Earth System Governance: Research in Aid of Global Environmental Sustainability



This issue features an emerging initiative of the International Human Dimensions Programme on Global Environmental Change (IHDP) to make Earth System Governance (ESG) an organising focus and a cross-cutting theme in global environmental change research. This editorial highlights the impor-

tance of this initiative for IGBP scientists and leaders.

The ESSP's Global Environmental Change and Food Security Project, the Global Water System Project and the Global Carbon Project have already expressed interest to participate in the new project. Many in the IGBP network may find the initiative mysterious or unrelated to their programmes and concerns. Even just understanding the *name* of this initiative requires some social science knowledge! The term "governance" is increasingly preferred by social scientists over the term "management," because the latter tends to connote top-down, governmental control. "Governance" integrates understanding of the fact that environmental sustainability is decided not only by governmental policy makers but by a wide, heterogeneous array of domestic and transnational actors and processes operating both "below" and "above" national governments, including non-governmental environmental organisations, intergovernmental institutions, and industry and citizen groups. The United Nations Intergovernmental Panel on Climate Change illustrates how an intergovernmental, scientist-led institution can influence Earth System science and governance.

ESG will study governance processes and institutions in a broad sense; science and the science-policy interface are important (albeit non-exclusive) parts of this theme. The relevance of the ESG initiative to all IGBP programmes becomes clear once one understands that a great heterogeneity of actors and processes guides not only the uptake of science but also the kind of science that gets produced and the processes by which it is disseminated. This in turn shapes its uptake, since actors tend to be more disposed to accept knowledge from some sources than others. Science and other types of knowledge are only useful if they are perceived as such on the part of users, be they other scientists, decision makers or laypersons; any given piece of knowledge may

objectively speaking be useful, but its use depends on users' awareness that it exists, their trust in its validity, their judgment that it is relevant to their concerns, and their ability to act upon it. ESG aims to identify the actors, mind-sets, institutions, conditions and complex multi-directional processes that variously limit or facilitate the societal relevance, uptake, and benefits of scientific knowledge. ESG will also need to identify and address important regional differences in the science-policy interface, e.g. differences between the so-called global North and South.

Several common preconceptions among scientists may limit their understanding of the science-policy interface and the conceptual framework of ESG. Along with ineffective organisations, processes and government practices, such preconceptions are part of what ESG needs to identify and help change. Two are worth mentioning:

Preconception 1: Scientists should not concern themselves with policy.

Scientists, especially in developed countries, tend to think that policy concerns should not affect the kind of science they do. Yet analysts mindful of planetary, environmental sustainability challenges suggest that sustainability goals and users' needs should shape science agendas to a greater extent. Contrary to common assumptions on the part of natural scientists, this does not necessarily politicize science, nor mean that they should abandon basic science, engage in policy-driven research or dictate policy agendas. Rather, it means that science agendas need to be shaped such that they best meet societal needs. These needs can and should include basic science to an appropriate extent considering time and resource limitations. Associated deliberations must also balance short- and long-term needs and private gain versus the common good.

Preconception 2: The solution to problems in the science-policy interface lies in improved communication of scientific results to the public.

This preconception is not wrong but overly simplistic. It assumes that scientists speak with one voice and that they are working the right way on the right problems and merely need to communicate more and better to make decision makers and the public understand the importance and policy implications of their work. Yet, as discussed in preconception 1, the sustainability challenges and the reality of limited time and resources require critical analysis of science agendas and careful identification of present scientific knowledge gaps which, if filled, might significantly help move decision making forward and generally improve broad-scale societal benefits from science.

The IGBP is well equipped to facilitate the dialogue for steering science agendas – including those involving basic science – such that they are more likely to help facilitate a transition to global environmental sustainability. The IHDP Earth System Governance initiative can be valuable in this process.

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