

Navigating the Anthropocene: Improving Earth System Governance

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Science assessments indicate that human activities are moving several of Earth's sub-systems outside the range of natural variability typical for the previous 500,000 years (1, 2). Human societies must now change course and steer away from critical tipping points in the Earth system that might lead to rapid and irreversible change (3). This requires fundamental reorientation and restructuring of national and international institutions toward more effective Earth system governance and planetary stewardship.

We propose building blocks of such a new institutional framework, based on a comprehensive assessment conducted in 2011 by the Earth System Governance Project, a 10-year social science-based research program under the auspices of the International Human Dimensions Programme on Global Environ-

mental Change (IHDP) (4, 5). The assessment has been designed to contribute to the 2012 United Nations (UN) Conference on Sustainable Development in Rio de Janeiro, which will focus on the institutional framework for sustainable development and possible reforms of the intergovernmental governance system.

The assessment revealed remaining differences of opinion among social scientists, as well as an increasing consensus in many areas. As a general conclusion, our work indicated that incremental change (6)—the main approach since the 1972 Stockholm Conference on the Human Environment—is no longer sufficient to bring about societal change at the level and with the speed needed to mitigate and adapt to Earth system transformation. Structural change in global governance is needed, both inside and outside the UN system and involving both public and private actors.

To this end, decision-makers must seize the opportunity in Rio to develop a clear and ambitious roadmap for institutional change and effective sustainability governance within the next decade. Seven reform measures are urgently required as a first step.

Seven Building Blocks

First, the environmental agencies and programs of the United Nations must be reformed and/or upgraded (7). Many reform proposals have been submitted in recent decades. Some of the more radical proposals—such as an international agency that centralizes and integrates existing intergovernmental organizations and regimes—are unlikely to be implemented and would yield uncertain gains. However, most of us see substantial benefits in upgrading the UN Environment Programme to a UN specialized agency for environmental protection along the lines of the World Health Organization or the International Labor Organization, that is, a strong environmental organization with a sizable role in agenda-setting, norm-development, compliance manage-

The United Nations conference in Rio de Janeiro in June is an important opportunity to improve the institutional framework for sustainable development.

ment, science assessment, and capacity-building (8–10).

Second, it is crucial to strengthen the integration of the social, economic, and environmental pillars of sustainable development, from local to global levels. The UN Commission on Sustainable Development (CSD) was created in 1992 for this purpose. Yet its political relevance as a subbody to the UN Economic and Social Council has remained limited. Governments must now take action to improve the integration of sustainable development policies. In our view, the CSD must be replaced by a new mechanism that stands much higher in the international institutional hierarchy. The most promising route is creating a high-level UN Sustainable Development Council directly under the UN General Assembly (11). To be more effective, such a council should rely not on traditional UN modes of geographical representation, but give special predominance to the largest economies—the Group of 20—as primary members that hold at least 50% of the votes in the council. Only such a strong novel role for the Group of 20 will allow the UN Sustainable Development Council to have a meaningful influence in areas such as economic and trade governance. The countries that cooperate in the Group of 20 represent about two-thirds of the world's population and around 90% of global gross national product. This legitimizes a sizeable institutional role for these nations as primary members of a powerful UN Sustainable Development Council.

Third, better integration of sustainability governance requires governments to close remaining regulatory gaps at the global level. One such area is the development and deployment of emerging technologies, such as nanotechnology, synthetic biology, and geo-engineering. Such emerging technologies promise significant benefits, but also pose major risks for sustainable development. They need an international institutional arrangement—such as one or several multilateral framework conventions—to support forecasting, transparency, and information-sharing; further develop technical standards; help clarify the applicability of existing treaties; promote public discussion and input; engage multiple stakeholders in policy dia-

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logues, and ensure that environmental considerations are fully respected (12).

Fourth, integration of sustainability policies requires that governments place a stronger emphasis on planetary concerns in economic governance. Environmental goals must be mainstreamed into global trade, investment, and finance regimes so that the activities of global economic institutions do not undermine environmental treaties because of poor policy coherence (13, 14). Changes in world trade law to discriminate between products on the basis of production processes are critical if investments in cleaner products and services are to be encouraged, for example, through special recognition for environmentally friendly products and technologies. Such discrimination, however, must be based on multilateral agreement to prevent protectionist impacts.

Fifth, we argue for a stronger reliance on qualified majority voting to speed up international norm-setting. Political science research shows that governance systems that rely on majority-based rule are quicker to arrive at far-reaching decisions and that consensus-based systems limit decisions to the preferences of the least ambitious country (15). Yet at the international level, majority-based decision-making is still rare and needs to be further extended especially when Earth-system concerns are at stake. Weighted voting mechanisms can ensure that decisions take all major interests among governments into account without granting veto power to any country (16).

Sixth, stronger intergovernmental institutions as outlined here raise important questions of legitimacy and accountability (17). Global governance through UN-type institutions tends to give a larger role to international and domestic bureaucracies, at the cost of national parliaments and the direct involvement of citizens. Accountability can be strengthened when stakeholders gain better access to information and decision-making through special rights enshrined in

agreements or stronger participation in councils that govern resources and in commissions that hear complaints. Greater transparency can help empower citizens and consumers to hold governments and private actors accountable and can provide incentives for better sustainability performance (18). In particular, stronger consultative rights for civil society representatives in intergovernmental institutions would be a major step forward, including in the UN Sustainable Development Council that we propose. This requires, however, transparent and effective accountability mechanisms for civil society representatives vis-à-vis their constituencies, as well as appropriate mechanisms that account for imbalances in the strength of civil society among different countries and for power differentials among different segments of civil society (for example, through separate sub-chambers for different regions and/or different interests, such as environmentalists, industry, youth, and so on).

Seventh, equity and fairness must be at the heart of a durable international framework for sustainable development. Strong financial support of poorer countries remains essential (19). More substantial financial resources could be made available through novel financial mechanisms, such as global emissions markets or air transportation levies for sustainability purposes (20).

Constitutional Moment

The world saw a major transformative shift in governance after 1945 that led to the establishment of the UN and numerous other international organizations, along with far-reaching new international legal norms on human rights and economic cooperation. We need similar changes today, a “constitutional moment” in world politics and global governance.

Such a reform of the intergovernmental system—which is at the center of the 2012 Rio Conference—will not be the only level of societal change nor the only type of action

that is needed toward sustainability. Changes in the behavior of citizens, new engagement of civil society organizations, and reorientation of the private sector toward a green economy, are all crucial to achieve progress. Yet, in order for local and national action to be effective, the global institutional framework must be supportive and well designed. We propose a first set of much-needed reforms for effective Earth system governance and planetary stewardship. The 2012 Rio Conference offers an opportunity and a crucial test of whether political will exists to bring about these urgently needed changes.

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16. Weighted voting implies a departure from the traditional intergovernmental approach of “one-country-one-vote,” which gives equal weight to all countries regardless of, e.g., their population size. Our proposal of special voting rights for the Group of 20 in the UN Sustainable Development Council is one example. Another example is the double-weighted majority voting in the treaties on stratospheric ozone depletion, which accept majority decisions in certain areas as long as they include the majority of all developing countries and the majority of industrialized countries.
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