

Needed: A UN Science Adviser

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The modern world is pervasively influenced by science and technology in myriad ways on a daily basis. Similarly, international organizations touch upon human and social activity every day in countless little and not so little ways. We believe that it has become increasingly important to bring these two facets of human life together through appropriate governance arrangements that will put science and technology at the service of humanity without borders. That is, science, technology and innovation for human development for all will not simply happen but must be made to happen through global governance. This in turn presents an opportunity for the United Nations, as the custodian of the Global Agenda, to reclaim relevance with most member states and “the peoples” of the world, and, within the United Nations, for the General Assembly to reassert leadership in an important dimension of the Global Agenda. We therefore call for the creation of a new post of Science Adviser to the President of the United Nations General Assembly, and for a Knowledge Compact to be among the early priorities for the Science Adviser that would set out the principles governing the global exchange of science.

The Importance of Science and Technology to Modern Life

One of the most critical challenges for contemporary national and international leaders is change and risk management. Rapid development and diffusion of science and technology are the driving factors of modern development and global economic integration. Usually the source of solutions to troubling problems, they can also be the source of some problems with which societies have to deal. Even more than a knowledge economy, we live in a knowledge society. There is a twin process at work. There is growing knowledge intensity – the amount of knowledge per graduating student has increased dramatically from one generation to the next. This is matched by a growing technology intensity in the application of the new knowledge.

The world faces increased demands for access to state-of-the-art scholarship for solving critical global problems. Scientists have a duty to make their knowledge available for the betterment of humanity. Unfortunately, the distribution and use of scientific knowledge and technological enterprise for the betterment of society has been highly skewed across the world. Those of us who take our computer keyboard for granted tend to forget that millions of people do not even use the telephone as a daily tool. Knowledge is crucial to climbing out of the poverty trap and closing the wealth divide, yet much scientific knowledge that already exists in advanced societies is yet to be diffused to the rest of the world.

Technology transfer is seen as the solution, but it is a complex process involving the building of technological capabilities in recipient countries to apply, adapt and assimilate

technology in the productive sectors. Investment in education and technological infrastructures is needed on a scale that is feasible only through partnerships among the public and private sectors, and with the support of all development partners.

Science and technology touches directly on six of the eight MDGs: to end poverty and hunger, promote universal education, improve children's and maternal health, combat HIV/AIDS, and promote environmental sustainability. It is equally relevant to many items on the peace and security agenda. To promote arms control and disarmament, for example, scientists can conduct research into managing the civilian nuclear fuel cycle, improving the physical security of nuclear material and facilities, verifying a Fissile Material Cutoff Treaty, and strengthening the Comprehensive Test Ban Treaty (CTBT).¹ Much of this can be done in advance in order to enhance the prospects of arms control and disarmament agreements. For example, the CTBTO has spent around one billion dollars over the last twelve years to build, operate and maintain the highly technical International Monitoring System that links 320 monitoring stations and 16 laboratories in nearly 90 countries. Its antecedents lie in the activities of the Group of Scientific Experts that was set up by the Geneva-based Conference on Disarmament and that developed and tested approaches to the seismic monitoring of nuclear test explosions from the mid-1970s onward. Its work, undertaken even in the midst of the Cold War, was essential for laying the scientific groundwork for the CTBT negotiations.

The transfer and absorption of environmentally sound technologies is increasingly being recognized as critical to promoting sustainable development in developing countries. A similar recognition should be nurtured for other internationally agreed development goals. Science and technology can be used to increase the volume and nutritional value of food; to treat water and make it safe for drinking; to make medicines available to the poor at affordable prices; for applications in industrial engineering and abatement of polluting after-effects; and so on.

Within the United Nations, different bodies dispersed around the world address a wide range of science and technology issues. The applications of scientific knowledge and technological solutions cut across practically all of the economy sectors and engage most organizations of the system that address scientific and technological issues in the context of their respective sectoral work. Their work needs to be better integrated, and the policy frameworks and perspectives put forward by them must be better bridged. To bring these results about requires not so much technological solutions but the launching of new initiatives among scientists, policymakers and private sector stakeholders. The United Nations should spearhead this effort.

¹ Royal Society, *Scientific Cooperation to Support Nuclear Arms Control and Disarmament* (London: Policy Document 03/10, March 2010).

Crisis of Confidence and Relevance for UN-Centered Multilateralism

The United Nations has the responsibility to preserve international peace and promote human development. The collapse of the Copenhagen conference on climate change in December 2009 confirmed that there is an intensifying crisis of confidence in the world's system of organized multilateralism centred on the United Nations. Yet most developing countries continue to regard the United Nations as a partner in the joint quest for development and security. It remains our one and best hope for unity in diversity in a world in which global problems require multilateral solutions. It is the centre for harmonizing national interests and forging the international interest.

Of course one part of the the UN is an international bureaucracy with many failings and flaws and a forum often used for finger pointing, not problem solving. Too often has the UN demonstrated a failure to tackle urgent collective action problems due to institutionalized inability, incapacity or unwillingness.

Yet, perhaps surprisingly, the world body remains the embodiment of the international community, the focus of international expectations and the locus of collective action. The reason for this is that, much more than the attributes of bureaucratic rigidity, institutional timidity and intergovernmental trench warfare, the United Nations is the one body that houses the divided fragments of humanity. It is an idea, a symbol of an imagined and constructed community of strangers. It exists to bring about a world where fear is changed to hope, want gives way to dignity, and apprehensions are turned into aspirations. In the words of the illustrious Secretary-General Dag Hammarskjöld, the United Nations was “not created in order to bring us to heaven, but in order to save us from hell.”² The timely and optimum use of science is imperative to escape from hell on earth that defines, still, the lives of hundreds of millions of human beings.

The United Nations is at once both the symbol of a common future for the betterment of humanity, and the institutional means of bringing about such a better future for all of humanity. In an information society and world, the UN's comparative advantage lies in its identity as the custodian and manager of knowledge-based networks that give it a global mandate and reach. It is a knowledge broker with a global leveraging and networking capacity and the mandate and capacity to provide a platform to voices from many developing countries that are often absent, excluded or marginalized in the global scholarly and policy discourse.

Global Governance for Science

If the Millennium Declaration expresses humanity's shared aspirations, the structures and processes of the United Nations should be the principal vehicle for the attainment of those collective goals. The UN's founders created the General Assembly as the forum of choice for discussing the world's problems, resolving disputes and articulating global

² Quoted in Brian Urquhart, *Hammarskjöld* (New York: W. W. Norton, 1994), p. 48.

norms; the Security Council for keeping the peace and enforcing the norms; the specialized agencies to address transnational technical problems; and the office of the Secretary-General to run this vast machinery smoothly and efficiently.

The scientific community's input and participation in global governance has been fragmented and ad hoc. The specialized agencies interact with sectorally defined science communities. The UN's own research institutions – for example the UN University and the UN institutes for training and research (UNITAR) and for disarmament research (UNIDIR) – suffer from institutional segregation and financial and staffing constraints, with little structured collaboration among the producers of knowledge and the operational and policy units of the UN system. Two successful examples of the utilization of scientific networks for evidence-based global public policy are the Intergovernmental Panel on Climate Change (IPCC) – which also shows the need for caution against the politicization of scientific authority – and the Millennium Ecosystem Assessment.

In the received linear model of science policy, investments are turned over to national scientific communities. The current governance arrangements for science are nationally based and not internationally coordinated. The notion of global governance – the sum of norms, laws, policies and institutions that define, constitute and mediate relations among citizens, society, market and the state in the global space; that is, between the wielders and objects of international public power³ – underlines both the diminished salience of the territorially-bound sovereign state and the growing importance of intergovernmental and nongovernmental actors in steering the global agenda. There is a corresponding need to restructure the global governance of science in the new global social context of “changing public relationships and new geographies.”⁴

The production, dissemination and transmission of science and knowledge is not random but structured activity through schools, universities, firms, government agencies, professional organizations, and other social institutions. Scientists are often interested in knowledge for its own sake and the acquisition and advancement of new knowledge is reward enough for them. All governments, but the governments of developing countries in particular, are interested in scientific knowledge not simply to understand the world but to control and alter it through targeted interventions, which is where technology and innovation come in. The internal governance of science is largely controlled by professional bodies who determine what counts as scientifically validated knowledge through peer review mechanisms and replication, as well as its communication to the broader epistemic community through conference papers and publications. External governance mechanisms seek “to provide, regulate, and distribute science” through upstream funding to launch promising research projects; the establishment of norms, rules, and standards; protecting intellectual property rights; and downstream regulations

³ Thomas G. Weiss and Ramesh Thakur, *Global Governance and the UN: An Unfinished Journey* (Bloomington: Indiana University Press, 2010), p. 6.

⁴ Zaneta Ozolina, et al., *Global Governance of Science*. Report of the Expert Group on Global Governance of Science (Brussels: European Commission, European Research Area, Report No. EUR 23616 EN, 2009), p. 6.

to prevent misuses and misapplications of scientific knowledge.⁵ Some tension is inevitable at the interface between the internal and external governance of science as the quest for scientific knowledge is subordinated to governments' definitions of the public good, thereby limiting intellectual autonomy and risking the politicization of science.

The community of science and technology experts is itself increasingly globalized and networked. Within countries, it is often linked structurally to national governments, for example through national science advisers. But it is not yet joined up with governance at the global level. The most pressing global challenges demand scientific input, technology transfer and application, and international collaboration. This makes global governance unavoidable. To promote and facilitate a more accentuated presence of the science community in the global decision-making processes, we recommend the creation of a new post of Science Adviser to the President of the UN General Assembly.

Any global governance of science would assert the international community's control of science, technology and innovation. Some national governments as well as professional scientific associations may resent and resist efforts by the United Nations to shape and constrain political and economic action in efforts to steer the production and use of knowledge to globally-defined appropriate ends. The controversy over the IPCC reports demonstrates the potentially problematic nature of how science is used or abused to inform, justify and challenge policy. Yet the alternative is to base policy on scientific ignorance, which is clearly even less tolerable. At the same time, the decision to create an independent review panel to assess the IPCC reports in turn indicates an acknowledgment of the risk that in the name of autonomy, self-governance by scientists can lead to attempts to protect jurisdictional boundaries and orthodoxies at the cost of critical inquiry and advancement of knowledge.

Recapitulating the General Assembly

One of the best ways to empower the UN's member states is to empower the General Assembly as the only plenary UN body. The Security Council may be the most important UN organ and its geopolitical centre of gravity. But as it has progressively expanded its powers and reach, so it has steadily constricted the role and relevance of the General Assembly. The United Nations derives its unique legitimacy and its unmatched convening power from its universal membership; the only UN body in which all UN member states come together is the General Assembly. That should be a major source of its authority and legitimacy. But the very same universality makes the General Assembly a suboptimal organ for efficient decision-making.

One solution to the conundrum lies in capacitating the office of the President of the General Assembly. We tend to forget that in original conception, the General Assembly President was the most important office holder in the international organization. The Secretary-General is the chief administrative officer at the top of the international civil

⁵ Ibid., p. 11.

service. While UN officials, including the Secretary-General, work *for* the organization, member states are the political masters who alone can be said to *own* it. And the only person who represents and speaks for the General Assembly is its President. This is why in official protocol, the President of the General Assembly precedes the Secretary-General. Creating a new post of a Science Adviser, backed by a modestly staffed office, would begin to build the necessary independent analytical capability of the General Assembly through the office of the President.

The Science Adviser should be chosen for either a three or a five year term, renewable once, to ensure continuity and stability without courting tiredness. The mandate would be:

- To act as the focal point for policy advice to the General Assembly through the President on all matters relating to harnessing science and technology for human development;
- To heighten the visibility and input of the knowledge production sector and infuse the UN policy deliberations with the best available evidence based analysis;
- To cooperate with – without competing with or duplicating – the existing scientists dispersed throughout the UN system in the secretariat, funds, programs and specialized agencies;
- To bridge the sectoral divisions in the existing distribution of scientific knowledge in the UN system;
- To match the global demand for science and technology with supply; and
- To coordinate inputs from national science advisers.

Because of the exceptional importance of science to the developing countries, we would anticipate that in most instances, and certainly in the first instance, the inaugural Science Adviser would be chosen from a developing country, not just by nationality but in terms of actual work experience. There should also be an advisory body of around 15 scientists who reflect disciplinary, gender and geographical balance. There are several existing models for choosing the chair(s) of such an advisory body whose members will be expected to act in their personal capacity and not as representatives of governments or professional organizations.

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