

21st Pacific Science Congress, Okinawa Japan

Strengthening Linkages between Science and Policy, UNU-IAS Workshop June 14th, 2007

Why, despite recent advances in biotechnology, nanotechnology, medicine and environmental sciences, do more than 1 billion people around the world continue to live in extreme poverty without access to proper nutrition, safe drinking water, and basic medical services and survive on less than 2 USD a day? Why, despite unequivocal evidence that global warming will continue to cause dramatic changes in wind patterns, precipitation and extreme weather that will negatively affect human populations have policies mitigating these effects and providing adaptation options remained challenged?

Is there a mismatch in developments in science and technology with commensurate policies to make use of them for human development? The tenuous links between science and policy have been cited as one of the primary reasons for shortcomings in technology for the poor. Indeed, there is no doubt that a paradigm shift is needed in the way science based advice is translated into successful policy if we are to achieve sustainability.

The UNU-IAS workshop on “Strengthening Linkages between Science and Policy” held at the 21st Pacific Science Congress engaged scientists, policy-makers, and the science advisors in discussing innovative ideas on resolving the science-policy divide.

The workshop, which took place on June 14, 2007 in Okinawa, Japan, consisted of a morning panel of keynote speeches followed by an afternoon session of case study presentations. Among the morning participants were Kiyoshi Kurokawa, Mohamed Hassan, Calestous Juma, Charmine Koda, S R Rao, and Monte Cassim. The afternoon session featured experts on linking science and policy such as Rod Lamberts, Ancha Srinivasan, Tatiana Gadda, Yuko Nishida, Alphonse Kambu and Catherine Monagle.

A H Zakri, Director of UNU-IAS, opened the workshop by welcoming participants and stressing the importance of resolving the troubled relationship between science and policy. He urged participants to share innovative ideas and suggest ways to strengthen linkages between science and policy.

[Mohamed Hassan](#), President of the Academy of Sciences for the Developing World, spoke of the problems and challenges constraining linkages between science and policy. He insisted that an improvement in the supply of research output both in terms of quality and quantity is needed in a number of developing countries believing that the shortage in significant science, technology and innovation capacity in many developing countries translates into a lack of capacity to advise policymakers. Hassan argued that the lack of investment in translating science into policy also poses significant challenges. He concluded by calling for strengthening the advisory capacities of the academies of science to enable them to provide independent authoritative evidence based advice to policy makers.

[Calestous Juma](#), Director of the Science, Technology and Globalization Project at Harvard University's Kennedy School of Government, spoke of how advice on policy making is context-dependent. He stressed the importance of shifting from science and technology advice to innovation policy, of involving the private sector and universities, and of fostering continuous interaction between various actors. Juma suggested that effective advice must have a strategic vision and correct policy context and cited the example of how a newly elected government can be the most receptive partner in the dialogue. Juma highlighted some of the most important issues including the early identification of problems, the importance of a diversity of inputs, the necessity for an open and inclusive platform, and the need for review and feedback. Juma concluded by calling for the strengthening of science advisory positions.

While Hassan and Juma provided an overview and some suggestions for linking science and policy in terms of context and content, Charmine Koda, Director of the United Nations Information Centre in Tokyo, Japan, enriched the discussion by focusing on how the media can play a role in strengthening these linkages and how communicating complex messages in simple language still proves to be a challenge for scientists and policy makers alike. She noted that a difference in style that exists between scientific and media reports. While the media tends to cover immediate 'crisis' and attention-getting issues, scientific reports are usually long-term, research oriented publications that are written for a scientific audience. Koda mentioned that in order for scientific research to be widely read and appreciated it is important for scientists to establish a personal relevance to the issue and try to teach it to the public concisely.

Following Koda's presentation on the importance of the medium in communicating science, Kiyoshi Kurokawa, President of the Science Council of Japan and the Pacific Science Association stressed the role of scientists in identifying the target audience. He compared scientific work to a movie and suggested that contemporary scientists were trying to be the director, the producer, and the actor all at once. He insisted that this was one of the major setbacks of scientists in communication as their expertise is research and not communication. Kurokawa said that it was important for scientists to target a specific audience in every situation and not get lost trying to address the general public at once.

[S R Rao](#), Ministry of Science and Technology, Government of India and President of the Indian Society for Marine Archaeology, discussed the dynamic nature of linkages between science and policy in relation to the specific example of India. He stressed that there were practical gains in linking science to policy in developing countries, including exposure to world class research and development, attraction of foreign investment, and streamlined transboundary movement of natural resources. He also insisted that stakeholders should be directly included in science and policy decisions and that future institutions and universities need to be reorganized to include a research and implementation course. He cited examples of how science provided a platform for rapid developments in policy in areas such as space technology while policy provided platform for development in information and communication technology in India. He provided some views on various dynamics and flow of links between science and policy.

[Monte Cassim](#), President of Ritsumeikan Asia Pacific University, closed the morning session by speaking about the problems present generations face and discussed ways in which to attract young students to science and technology. He insisted that without young scientists, countries will eventually lose the scientific edge and science will suffer a great loss. He presented a case study of a “Discovery Research Laboratory Initiative” at the Ritsumeikan Asia Pacific University that nurtures young interests in science. He then discussed the importance of promoting projects that can capture the interests of young scientists and the significance of maintaining academic independence but stressed the need for such projects to be socially relevant and acceptable.

The afternoon session began with a presentation by [Rod Lamberts](#), Deputy Director of the Centre for Public Awareness of Science, on science communication. He highlighted the importance of context in science communication and insisted that science-policy decisions must be based on robust evidence. He also spoke of the importance for scientists to learn from the public. Lamberts also stressed that education rarely equals motivation. He acknowledged that although there is a critical need to integrate science and technological considerations into national policies there is little motivation to do so. He concluded by suggesting ways to strengthen science-policy linkages from a science-communication perspective including communicating model success stories widely, focusing on small scale victories rather than large scale failures, and exchanging and communicating information in a multi-disciplinary setting.

[Ancha Srinivasan](#), Programme Manager at the Institute of the Global Environment Strategies based in Hayama, Japan, presented a case study about impact of climate change in the Asian region and how science provided platform for policy making citing the International Panel on Climate Change (IPCC). Srinivasan argued that there are likely to be abrupt changes concerning climate change in the future and insisted that in order to mitigate the effects, scientists and policymakers alike must increase the participation at a national level, promote new and constructive ideas about the post-2012 emission targets, and assess the progress of our efforts to deal with mitigation and adaptation. He suggested that in order to deal with post-2012 consequences, it is necessary to improve our salience, timing, adequacy, relevance, and accuracy of information. He also stressed the need for ‘strategic marketing of results’ besides lamenting that though science paved the way for climate change, policy politics is proving to be a bottleneck in implementation of such policies.

[Tatiana Gadda](#), a JSPS-UNU Postdoctoral Fellow interested in understanding the linkages between ecosystems and people, presented observations and recommendations based on her case study of seafood consumption patterns in Tokyo. She insisted that consumption and consumption patterns must be understood at various scales and levels and not just at the level of the final consumer. Ideally, a whole range of institutions are needed from international to local in order to solve the problem of sustainable development and she highlighted the sub-national scale as particularly important. Gadda suggested that in order to achieve sustainable development, consumption patterns must be critically analyzed and that strategies must look beyond the national level because the

sub-national level can provide a platform for developing and implementing successful policies.

Moving beyond an exploration of the sub-national level, [Yuko Nishida](#), a member of the Bureau of Environment, Tokyo Metropolitan Government, spoke of the effects of climate change policy within Tokyo. She stressed that as a policy-developer it is important to not only to engage in dialogue with big corporations, but that small business and households are important stakeholders as well. Even though Japan registered an overall increase on CO₂ emissions, she said that the Tokyo Metropolitan Government were working on several programs that would lead to a downward trend in emissions between 2015-2020. Nishida said that there were various stages involved in the planning of policy, including issue building, choosing an appropriate policy, and program development. To draw scientists' interests toward policy and program development, she insisted that policymakers needed to show more demand from the policy side and foster open discussion.

[Alphonse Kambu](#), Director of the Ishikawa International Cooperation Research Centre, contributed to the discussion on science-policy linkages through a case study on the indigenous Hagahai community of Papua New Guinea. He spoke about a patent of the human t-lymphotropic virus by an academic researcher without any consent from the community and government and its subsequent retraction after several controversies. He cited the limited communication and consultation between the stakeholders involved as one of the reasons for the controversy. Kambu expressed that there is a need to balance private incentives for research and public access of the product to benefit the poor. He suggested that scientists need to weigh the costs and benefits before trying to link science with other disciplines.

[Catherine Monagle](#), Research Fellow at the United Nations University – Institute of Advanced Studies, presented a strategy for good science governance. She argued that science governance in the South requires different principles than those in the North. She suggested that science governance requires clarity as to the values of the society in which science is used and varies from region to region. She added that at the same time, however, there are some internally applicable principles of governance such as the UNDP Principles of Good Governance. Monagle stressed the importance of understanding these universal principles in the context of South-South and North-South exchanges and only then apply these principles of governance. Monagle concluded that effective science requires effective science literacy, which requires effective science educators and communicators.

After a fruitful afternoon session, Balakrishna Pisupati, UNU-IAS Research Fellow, chaired the closing session. Many issues were raised during the closing session including the need to collaborate in creating a strategy for the way forward. Many of the participants expressed interest to collaborate with the UNU-IAS to continue to develop strategies for strengthening linkages between science and policy. The importance of understanding and promoting science also emerged as key focal points for future

developments. The need for science to be responsive to developing country needs and the urgency for capacity-building and education were articulated in the closing session.

Pisupati then closed the workshop by summarizing some of the key points including the importance of investment, political backing, the context-dependent nature of science, strategic marketing of science-policy ideas, and improving communication between scientists, policy makers, and the public.