

Building the foundations for scientific advice in the international context*

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Today's global society has an unprecedented need for proper and reliable scientific advice. That is because the contemporary world is facing a variety of issues – climate change, energy crises, food security, epidemics – in which science, technology, and society are tightly intertwined. To address these issues, appropriate mechanisms that bridge science and policy making must be established. At the same time, one must recognize that the globalization of the political economy in the past few decades has changed the modality of national borders in every aspect. As a result of these changes, scientific enterprise and relevant socioeconomic activities as well as public policies may have consequences on all parts of the world.¹ Thus, scientific advisory systems today need to effectively function not only within individual countries but also in the international context.

Some academic studies have addressed how science should be interlinked with policy and society in the global context. Based on the case of international chlorofluorocarbons regulation, political scientist Peter Haas has proposed the 'epistemic communities' model, in which a group of scientists with a shared goal work together to provide expert knowledge and perspectives for helping politicians reach politically difficult agreements. According to this model, by utilizing the epistemic authority and value neutrality of science,² science can inform political decisions at the international level from a transcendental standpoint.

However, scholars of science and technology studies have pointed out that scientific advice in reality is not necessarily either objective or value neutral, which hinders scientific advice in serving as the 'silver bullet' in national or international normative conflicts.³ Additionally, many policy issues – which physicist Alvin M. Weinberg labels areas of 'trans-science' – cannot be approached solely from scientific viewpoints. These 'trans-science' issues require integrating scientific and political perspectives, an especially challenging prospect at the national and international levels because of barriers to cooperation between scientific and political communities such as biases in the interpretation and use of evidence.⁴ Such realities highlight the complexity of scientific advice in an international context. Scientists and other stakeholders from many countries – with their different scientific, political, and cultural traditions – must work together to produce scientific advice that can have far-reaching global consequences. As yet, well-established mechanisms for international cooperation and collaboration in this field do not exist. It was only in the past few years that earnest efforts to even discuss the issue of scientific advice in the global policy arena were initiated.

This article will explore possible strategies for building sound foundations for scientific advice in international contexts. The article first presents examples of several scientific advisory systems being deployed at the national, regional, and international levels and then focuses on existing international scientific advisory systems, specifically exploring their historical backgrounds and recent endeavours to address the complexities of scientific advice at an international level. Finally, there is a discussion concerning how international scientific advisory systems could be adapted to new global realities – strengthening the link between scientific advice and policy making, understanding cultural and historical differences among nations, and moving toward a 'system of systems' to augment collaboration between international advisory bodies.

Diversity of national and international scientific advisory bodies

Today, there is a diverse array of institutions that can be referred to as scientific advisory bodies, either operating to provide scientific advice to national authorities or at an international level. Some emphasise 'policy for science,' and others emphasise 'science for policy.' While not meant to be an exhaustive survey, the following categories reflect the diversity of scientific

advisory bodies associated with government and those that exist outside of government.

Governmental institutions at the national level

National scientific advisory bodies usually deal with domestic policy issues, but they are often connected to policy making in the international arena. Their advice can affect other nations' policies as well as broader discussions in the international community. Moreover, the scientific knowledge on which advice is based is often drawn from the best sources, which can be anywhere in the world. In this sense, national advisory bodies can contribute to and be informed by international science advice.

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