

Participation is the Fundamental Building Block in Science-Policy Interface Design

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Science-policy interfaces (SPIs) are an increasingly important feature of the United Nations system, helping to generate, assess and mobilize scientific knowledge for policymakers. Recent efforts to establish new SPIs in areas including artificial intelligence, chemicals, waste and pollution, and antimicrobial resistance demonstrate growing demand for these institutions. Yet questions remain about how SPIs should be designed to ensure they are effective, adaptable and able to support policy decisions. Convened by the Global Governance Innovation (GGI) Platform, this collection brings together four experts who examine key design considerations, including governance structures, participation, institutional learning and knowledge uptake. Together, the contributions highlight lessons for building SPIs that can effectively support global governance challenges.

A shared knowledge base is foundational to negotiating a collective response to global issues. Developing this knowledge base requires meaningful participation by all those that it aims to inform. This makes designing for participation the most fundamental building block for establishing new or modifying existing science-policy interfaces (SPIs).

The Intergovernmental Panel on Climate Change (IPCC) is often used as a model for designing new international science-policy bodies. I have studied the power and politics of the IPCC since 2008 by analysing the actors, activities and forms of authority that shape the organization and its assessment products.¹ It is through this study that I learned that meaningful participation by all members is both the most essential and most difficult ingredient of realizing a collective

¹ Hannah Hughes, *The IPCC and the Politics of Writing Climate Change* (Cambridge, UK, Cambridge University Press, 2024); Hannah Hughes, "Actors, activities, and forms of authority in the IPCC", *Review of International Studies*, vol. 50, No. 2 (2024). Available at <https://www.cambridge.org/core/journals/review-of-international-studies/article/actors-activities-and-forms-of-authority-in-the-ipcc/A70351D4E5D26E102E49ECAC209100F9>.

knowledge base. In this post, I want to step back from studying the social order of climate politics and apply the lessons I have learned to the design of science-policy relations. I identify participation, diverse knowledges and organizational support as three essential elements for producing a shared knowledge base for negotiating collective responses.

1) Participation

The Chair of the IPCC, Professor Jim Skea, once casually said to me, “It’s all about the people.” In my research, I observed this by following how an IPCC assessment report is produced. This revealed that a science-policy organization, like the IPCC, is essentially a set of different actor groups (scientists, secretariats, member governments), undertaking distinct tasks (authorship, administrative support, reviewing, approval), authorized by their specific forms of expertise on climate change. It is through the participation of each individual – as a representative of a group – that the final report is made relevant to the communities it serves. It is through the same participants that the final product is then taken back up by the community in practice – to shape further knowledge, collective negotiation and future action, as I represent in figure 1. This makes people – those participating in and contributing to an organization – the makers and conduits of science-policy products, and participation foundational to the design and organization of SPIs.

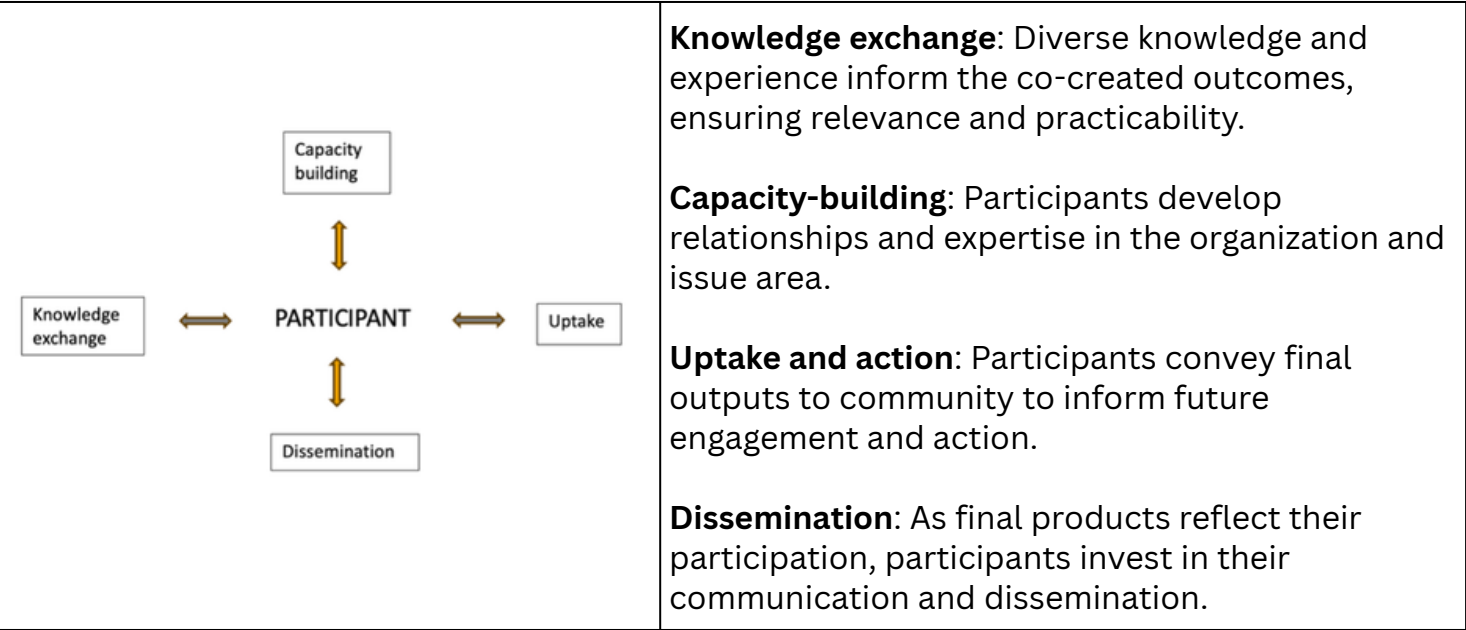


Figure (1) Idealized model of organizational participation. Participant investment serves several essential functions for the organization and the communities it serves.

The question then becomes, who needs to participate? As I identified in the design of new science advisory arrangements for antimicrobial resistance (AMR) and chemicals, waste and pollution,² identifying relevant participants and supporting their participation are critical elements in the successful establishment of a new body. Those that are the largest polluters and the biggest makers and exporters – including governments that support, depend upon and govern harmful industries – are readily recognized as key stakeholders. Reflecting their interests will likely be essential to ensure their investment in the organization and the impact of its products, although this interest and investment will also need to be carefully managed and potentially constrained. One such check is ensuring the same recognition for communities and representatives of groups most impacted by these issue areas. Ensuring that a new organization recognizes diverse knowledges and experiences as valuable and integral to the comprehensiveness of its products can serve as an important check on the dominance of scientific and technical forms of participation and their potential co-option.

2) Diverse Knowledges

In most issue areas the list of stakeholders that hold relevant knowledge and need to be informed by and act on organizational products is expansive – nearly every living being and the unborn are impacted by climate change, biodiversity loss, plastic usage, antimicrobial resistance and the rapid development of AI, and as such, need their interests to be represented. While different stakeholder groups will have distinct knowledges and understandings relevant to the communities they represent, not all will be recognized as knowledge holders with a valuable contribution to make to the shared knowledge base. The IPCC offers several valuable lessons on the lasting effects of limiting the knowledge and input that is recognized and valued to inform collective action.

Early on in the organization's establishment, developing country delegates highlighted that they did not have the necessary climate science expertise at the national level, nor the capacity to attend intergovernmental meetings, and they stressed that climate change was not just a technical issue but also an issue of development.³ This informed the organization's design of support for developing country participation in the form of a trust fund. However, it also had implications for the assessment of climate change and the forms of knowledge and expertise valued. Developing countries – as they highlighted – needed to develop technical expertise in

² Hannah Hughes, Jonathan Beynon and Anthony McDonnell, "Understanding lessons from the IPCC to inform the AMR Panel", Center for Global Development, 2025. Available at <https://www.cgdev.org/publication/understanding-lessons-ipcc-inform-amr-panel>.

³ Hannah Hughes, *The IPCC and the Politics of Writing Climate Change* (Cambridge: Cambridge University Press, 2024).

climate science. But, developed country members and those leading the organization's establishment also had important learning to undertake – they needed to comprehend the centrality of development for developing countries and for its inclusion in the shared knowledge base and negotiation of climate change. This is where a new SPI must tread carefully in its demarcation between science and politics, particularly as the concerns of some participants will have less supporting evidence in published literature. Not listening carefully to different understandings and knowledges of the problem, nor ensuring these are accommodated in organizational design and capacity-building mechanisms, will have lasting implications for a new science-policy organization and the politics of the issue they are designed to inform.

3) Supporting Participation

If participation is the foundation, and recognized forms of knowledge and capacities to participate largely reflect the global distribution of economic resources, then supporting participation is one of the most essential roles of a science-policy organization. The question is, how does a SPI support participation?

Participation is resource intensive and the extent to which a participant can invest is dependent on the time they can dedicate to organizational tasks. Therefore, SPIs need to identify capacity asymmetries and how these will and do impact on members' and contributors' participation. Regularly collecting the personal experiences of participants – as the IPCC often does through surveys – can provide an organizational knowledge base for designing tailored capacity-building mechanisms. An individual can learn from other participants to identify important avenues for influence and cultivate the necessary relations – if they have the time to invest in this – to transfer the relevance and significance of the organization and its outputs to other government departments with a potential stake in its outputs. This returns us to the politics. There is only so much individuals can do in a resource-constrained context and this limit will remain, as it has in the IPCC, without sufficient and consistent mobilization of support for the participation of low- and middle-income countries.

While a new science-policy organization will need to contend with the constraints on participation for the majority of its participants, it will also have to manage deep investment of members that seek to control and constrain the knowledge base and its influence over collective action. Again, there are limits to how much an organization can impact on members that do not want to accept knowledge of a problem and use their participation to confuse communication and hinder the collective response. However, identifying and recognizing a participant's situation and genuine concerns, and reflecting these points of tension in the shared knowledge for negotiation are essential.

Looking at SPIs through participation identifies important sites for further research and learning. One of the things that has become apparent through interviews, observations and conversations on the organizations that I study is that a central blockage point is between participants and their organization, particularly at the government level. Their ability to serve conduit functions and facilitate the uptake of knowledge to shape policy and action is largely dependent on their capacity – in terms of time and resources – to invest, and their location and the issue's importance within a government. This makes identifying the right government department and individuals to participate in a new body's work another key consideration.

4) Conclusion

Science-policy relations do not function in the idealized form presented in figure 1 because economic resources to participate are not equally distributed, not all forms of knowledge are equally valued to inform collective knowledge products, and many actors seek to privilege and assert their interests and needs over others. Therein lie the politics in designing SPIs. However, by taking participation as the foundation of SPIs, designers of international organizations can treat these as practical challenges that can be balanced through meaningful and diverse participation and ensuring multiple knowledges are recognized in crafting a shared knowledge base.