Before Science Crosses Borders, Evidence Must Cross the Room: Lessons from Seeds of Science Asia

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I began my career in genetics, but I soon became increasingly drawn to the ecosystem around science: how research is explained, how knowledge moves beyond the laboratory, and how (or whether) its significance is understood. That interest eventually took me into science diplomacy. Over the past sixteen years, I have worked on scientific relationships across conflict and national borders, in the Middle East, Europe, the USA, and now across Asia and the Pacific.

For much of that time, the most visible (and least permeable) border in my work was represented by a line on a map. But currently, I'm focused on another boundary: the one between those who produce evidence and those responsible for acting on it. It has no geographical, political or spatial border, but, as many on either side of that mysterious line will tell you, it can be remarkably difficult to cross.

Take Australia's now-famous *Wolbachia* dengue-control programme. On the face of it, the idea was a hard sell: release mosquitoes to stop dengue. But Professor Scott O'Neill and his colleagues had done their homework. In 2009, they showed that *Wolbachia* could be introduced into *Aedes aegypti* mosquitoes, making them far less able to carry the dengue virus.[1,2] By 2011, they had shown that another strain, *w*Mel, could block dengue in the laboratory and establish itself in wild mosquito populations near the city of Cairns.[3,4] The papers were published. The evidence was all there, and it was compelling.

Unsurprisingly, this "evidence" alone did not immediately authorise the release of *Wolbachia*-carrying mosquitoes across Townsville.[5] Before the city-wide deployment began in October 2014, Professor O'Neill and his team had to march right across the formidable science–policy border. They were armed with powerful science, sure, but also with a very different set of skills: those of science-to-policy translation. The programme secured regulatory approval and used surveys, public meetings, channels for responding to concerns and a community reference group to test and build public acceptance. The results are a frequently-cited example of science-to-policy translation in the Australian context.[6]

The scientists had asked whether the method worked, but government and community actors asked entirely different questions: What was at risk? Who had the authority to approve it? Would it affect people's lifestyles? How would concerns be answered? On what terms should it be deployed? *Was it worth it?*

Recognising that both sets of questions were essential helped turn promising evidence into city-wide implementation. The approach has since become part of a much bigger disease-control story.[7]

This example is, of course, not the norm. It is very common to see the reverse scenario play out, and for the scientific evidence to be shelved for a host of reasons. Often, these reasons are extremely sound policy considerations. Sometimes, however, the evidence is simply lost in translation.[8,9]

Scientists have historically lamented what they saw as the limited uptake of evidence they painstakingly produce. But policymaking is not a conveyor belt onto which evidence is loaded, processed and converted into a decision. What scientists call "evidence" enters a world of institutional responsibilities, political commitments, resource constraints and competing values. Perhaps policymaking is less a science than an art—policymakers weave together competing factions, paint realistic but hopeful pictures of the future, design intricate delivery plans and architect a careful balance of risk and reward. And they do all of the above while considering whether today's decision will build—or exhaust—the public trust and political capital needed to continue to create change.

I have been struck by the recent shift in science-policy parlance from calling for "evidence-based" policymaking to the more reasonable "evidence-informed" policymaking. It's a subtle shift in language, but it belies an increasing recognition that the threads of evidence supplied to policymakers are part of a much broader tapestry. (Of course, the alternative interpretation is the denial of the significance of expertise, but, having participated in many of these conversations in the region, I am resolutely optimistic).[10,11]

That modest rapprochement notwithstanding, scientists and policymakers are often at odds. Fundamentally, the scientific endeavour seeks to reduce uncertainty. Scientists test and retest hypotheses, and they collate robust data and evidence to get closer to the provable and tangible. Policymakers are motivated by different objectives, and in the face of complex pressures, they often act while uncertainty remains. Even when decisions have significant implications, policymakers can sometimes have little time to seek certainty. Effective advice mechanisms, therefore, depend not only on the quality of the evidence but on the quality of the relationship. And that's precisely what we set out to explore.

What Seeds of Science is Testing

Seeds of Science Asia works in this complex space. Run by our team at the International Science Council Regional Focal Point for Asia and the Pacific, in partnership with the International Network for Governmental Science Advice in Asia, it supports locally designed workshops, training, focused advocacy and other practical forms of science–policy engagement, accompanied by expert mentorship. These are not conventional research grants. They deliberately pair a research applicant with a policy, government or civil-society partner who has influence or ownership in the relevant area, such that the evidence producers and the evidence consumers are on the same team from inception.[12]

The first round supported ten projects across Asia on subjects ranging from urban resilience and agriculture to open science and energy communication. The second supports thirteen projects across ten countries, six of which involve Australian partners.[13,14] Across these varied subjects lies one question: what becomes possible when locally based scientists and policy actors have the means to work on the relationship between evidence and decisions?

The grants are deliberately modest. They create an opening: a reason to meet, a shared problem around which to organise and an opportunity to learn how the other side works. And they almost necessitate co-investment—we're asking participants for modest buy-in.

Translation Must Begin Before the Evidence is Finished

One lesson from Seeds of Science is that translation is extremely difficult at the final stage of research. If scientists complete their work and only then "export" it for policymakers, the question, timetable and output have already been fixed. The evidence may be rigorous, but it can be poorly aligned with approaching decisions, meaning that productive engagement begins earlier.

The assumption that "translation" of science is some form of simplification of scientific language for a "lay" audience misses the point. Scientists need to understand what decisions are possible, who holds authority and what constraints exist. Policymakers need to grasp the strengths, uncertainties and limitations of science. Often, the first step is to ensure that everyone is trying to solve the same problem.

In Bangladesh, the project "Science for Safer Cities: Co-Designing Urban Resilience with Local Governments through Inclusive Science Communication in Bangladesh" was designed to bring scientists, local government officials and communities together around urban climate resilience.[13] Early engagement with the Department of Environment, under the Ministry of Environment, Forest and Climate Change, sharpened the focus of the whole project: the immediate policy problem was not an absence of site-specific climate information, as first thought, but the difficulty of turning it into planning tools that local authorities could use. The project consequently moved beyond a conventional workshop to co-design a science-based, locally validated framework for addressing flood risk and extreme heat in Dhaka.

The Bangladesh example captures the point. The challenge was not simply one of explaining science more clearly or producing more data. Existing scientific data had to be connected to a decision framework that local authorities could deploy within existing policymaking systems. Early engagement changed the activity itself—from a workshop about climate information to the co-design of a practical planning framework. This is what it means for translation to begin before the evidence is finished: not simplifying the answer but making sure everyone is asking the same question.

Small Can Be an Advantage

Large international programmes are essential, but their scale can make experimentation difficult. A small grant can create a different space: convening people who do not routinely meet, testing a locally appropriate format and supporting repeated contact around a concrete task.

The first result may be modest: an official who knows whom to call; a researcher who understands when advice is needed; a reframed question; or an invitation to continue the conversation. None is a policy transformation, but each can support better decisions.

In South Korea, the project "Enhancing Sustainability in Digital Infrastructure: From Local to Eco-system" convened experts in AI governance, semiconductor infrastructure, energy policy and environmental law—fields that use different vocabularies and often analyse only one part of the system. The January 2026 seminar used the proposed Yongin Semiconductor Cluster as a common case through which participants could examine resource capacity, energy supply, environmental assessment, community acceptance and procedural fairness.[15] A single seminar could not resolve those contested questions. It did, however, create a space in which they could be considered together rather than in separate professional silos.

Small-scale work should not be romanticised, however. We've all been to many a workshop, and we know that they can be forgotten, that a relationship can disappear when people change roles, and that a policy window can close. Mentorship and follow-up matter because an event alone is rarely enough.

Local Ownership Is Not a Courtesy

Asia's diversity makes a single model neither possible nor desirable. A regional organisation cannot know which question is most urgent in situ, who has the authority to act or what form of engagement will be legitimate. Local teams understand their political, cultural and institutional context in ways an external funder cannot.[16] Our role is therefore to fund, mentor, connect and learn—not to prescribe the question or import a preferred solution.

In Labangka village in East Kalimantan, Seeds of Science supported a project that combined scientific expertise with local knowledge from farmers to explore the potential of converting palm oil waste into biofertilizers. This project was designed around local agriculture realities and combined locally available materials with indigenous knowledge. These hyperlocal insights could not have been accurately described by regional organisations. The outcome was both the empowerment of communities for sustainable agriculture and the incorporation of the biofertilizer initiative into formal village planning and resource allocation. And just like that, the "evidence" crossed into policy.[17,18]

Measuring What Remains

What should count as success? Attendance figures and completed workshops tell us little about whether the boundaries have become more permeable. Immediate policy change is also not a reliable measure, as policy processes are long and influenced by many factors; so, as much as we might like to attribute decisions to Seeds of Science meetings, that is probably unrealistic.[19]

Early indicators of success may instead be relational and institutional. For instance, did participants meet again, did a policymaker seek advice before the next decision, was a question reframed to address an identified policy need, or did an institution create an advisory process or channel for evidence? Signals like these show whether a one-off activity has planted the seed (pun very much intended!) of a continuing capability.

The natural corollary is that international cooperation rests on both domestic and institutional foundations. Transboundary challenges cannot be managed if researchers and decision-makers within countries lack ways to work together. Science diplomacy begins inside science systems, where knowledge becomes options and scientists and policymakers learn enough of one another's worlds to act together.

The focus and the commitment of the extraordinary Seeds of Science participants have shown that moving evidence within a room can often be a necessary first step toward sharing knowledge globally. The boundary between the cultures of science and policymaking is not dissolved by work like this, nor should it be. But it's crossed. And it's crossed locally, repeatedly and in both directions.

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