



A myth-busting guide to science-policy interfaces (SPIs)

The brief in brief

This is a beginner's guide to what science-policy interfaces (SPIs) are and how they work. It is aimed at people in science and/or policy who are interested in engaging more with the 'other' community and want to prepare for this. It dispels some frequent misunderstandings and looks at how to get more out of SPI work.

What is a science-policy interface (SPI)?

SPIs are the many ways in which scientists, policy makers and others link up to communicate, exchange ideas, and jointly develop knowledge for enriching policy and decision-making processes and/or research. They involve exchange of information and knowledge leading to learning, and ultimately to changed behaviour – doing something differently as a result of the learning – that in turn



represents the practical impact of SPIs.

SPIs can be very formal structures, such as the Intergovernmental Panel on Climate Change (IPCC), or the newly created

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). Many research projects include a component specifically for improving the interactions between the project, policy-makers and other stakeholders and ways in which results are communicated to policy actors – this is also a SPI.

Many SPIs, however, are less formal structures. Discussing a project with funders at the beginning of a piece of work can be a SPI: jointly deciding how to carry out research both to benefit science and to input results into aspects of policy. A workshop with policy-makers and scientists, and maybe other stakeholders, can be a SPI, so can a field trip.

Even one-to-one conversations between a decision-maker and a scientist can be a SPI, if knowledge is shared and developed in order to enrich science and/or policy.

SPIs are not limited to direct exchanges between science and policy actors. Other actors such as farmers, fishermen, foresters, land managers and NGOs, can feed in their biodiversity-related knowledge into a process, which in turn helps strengthen scientific knowledge and can increase the quality of decisions being made at various levels. Other actors can also help shape the policy priorities and the sort of science questions that should be addressed. Even lobbying can have many features of SPIs, though usually focused on advocating for particular outcomes.

So SPIs cover a very wide range of communication forums, situations and methods. They can be formal or informal, driven more by policy demand or by supply of science, long-term processes or one-off events. Their common feature is the potential for exchange of information, joint knowledge development and learning.

There are many [conferences] - particularly with an academic-style focus, which a lot of them are - I wouldn't even think about going because I would probably be asleep after the opening talk!

Mr N, decision-maker

However some SPIs are more effective than others. Often, the potential for communication is not realised – for example conference presentations of scientific results that fail to engage policy audiences, or research summaries emailed randomly to government departments. These could result in some learning and impact, but the chances are not good.

Some myths about science and policy

A series of persistent myths underlie conceptions of science and policy in environmental governance. Even where people are aware that these are myths, they often continue to operate as if they were true. The myths affect how people think of, and operate at, the science-policy interface. They can be traced to visions of rationality, science, and controllability inherited from the Enlightenment, and to the difficulty of grasping and dealing with complex socio-ecological systems.

Three myths about science are especially relevant for SPIs:

- *Complex systems can be fully understood and described;*
- *Uncertainty is always reducible or quantifiable;*
- *Simple cause-effect relationships can always be established (deterministic science).*

Three myths about policy are also common:

- *A socio-ecological system must be fully understood before making decisions that affect it (positively or negatively);*
- *With enough effort and knowledge, complex systems are fully controllable;*

- A decision is the end-point of a linear process of reasoning which includes neutral weighting of pros and cons and optimisation.

The last myth in the list stems from a failure to recognise that 'decision-making' is a continuous process, punctuated by 'choices' or 'decisions', and that the workings of this process depend heavily on institutional and other contexts.

Finally, there are three common myths about SPIs:

- Science and policy are two independent domains of human activity;
- SPIs are all about a one-way flow in which 'truth' (science) speaks to 'power' (policy);
- SPIs are simple forums through which reporting of science knowledge results in development of policy grounded in evidence, in clear and controllable ways.

They [scientists] go ahead and do their project and then try and pull in policy people, and it's too late by then because...well, it might be useful, but it might not.
Mrs K, policy adviser

In fact, most of the time, SPIs involve complex interactions and learning processes. Often luck plays a role in why, when and how interactions happen, work, and result in learning. Time, repetition and multiple communication

channels and methods can all help – there is no single magic bullet and no one-size-fits-all solution for ideal SPI communication.

What makes SPIs effective?

Some forms of communication are unlikely to result in effective knowledge exchange and learning. One-way communication, for example writing a scientific paper or giving a talk at a conference, is usually not enough on its own – there is nothing wrong with these activities, but they need to be backed up with opportunities for exchange and learning. Similarly, planning research without considering the needs of policy, or setting questions for research without involving scientists in exploring aspects of feasibility, time, and costs, are unlikely to be successful.

A SPI should instead involve on-going opportunities for exchange and learning, throughout the policy and research

The language of conservation is often talked about: "set aside", "lock up", "preserve"...they have very different meanings and negative meanings to the wider population with whom we really have to engage if we're going to make any difference. Dr B., Scientist.

processes, in order for both science and policy to get the most out of the process. This can involve spending time on developing common language, building trust, and developing capacities to understand others' positions, views, needs and constraints. Effective SPI communication is best seen as an on-going process: even one-off events or exercises such as a national ecosystem assessment take place within a wider science-policy context, drawing on past experiences and leading forward to new ones. People working in SPIs should remain conscious of these dynamic links and learn from them – for this, formal review and updating procedures may help.

Because SPIs are about fostering learning and influencing behaviour, their effectiveness is highly dependent on the people involved and on the policy processes and contexts within which they operate. Effective learning can benefit

from redundancy, in the sense of having several different SPIs operating in the same area, using different approaches, and from repetition of important activities and learning opportunities. These forms of redundancy and repetition should be viewed more as enhancing opportunities for effective communication than as duplication of effort.

Though there can be no 'one-size-fits-all' set of recommendations for the 'ideal' SPI, there are some general features that tend to support success. One popular metaphor considers the (perceived) credibility, relevance and legitimacy ('CRELE') of the SPI processes and the information exchanged. Steps to enhance these features will tend to foster greater learning and behavioural impact, though there can be trade-offs that must be resolved on a case by case basis. These issues are further explored in SPIRAL briefs on CRELE and on trade-offs in SPI design.

SPIRAL has studied a more complete set of SPI features relating to the objectives, structures, processes and outputs of SPIs. These include independence, vision, people, resources, balancing supply and demand, horizon scanning, continuity, conflict management, trust building, capacity building, adaptability, relevant outputs, quality assessment, and translation. Choices about these features will impact on CRELE now and in the future. Again, there are trade-offs and constraints, and people working in SPIs need to be aware of these and make strategic decisions to enhance the effectiveness of communication processes.

What to do next

Most scientists and policy makers, and many in other professions, will at some stage engage with a SPI of some sort. That is not to say that all in science and policy can or should engage in SPIs on a regular basis. It depends on the type of work, organisational roles, colleagues and hierarchies, and personal inclination, motivation and incentives. For those who do want to engage in SPIs, SPIRAL has many resources that can help.

Looking for more information on science-policy interfaces?

For more SPIRAL results, including references related to SPIs, see companion SPIRAL briefs at <http://www.spiral-project.eu/content/documents>

This brief is a result of research and interactions within and around the SPIRAL project. This brief was written by Sybille van den Hove, Rob Tinch and Estelle Balian (Median), Juliette Young and Allan Watt (Centre for Ecology and Hydrology), and Kerry Waylen (The James Hutton Institute).

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