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Strategic science with policy impact

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Evidence-based policy making is an important aspirational goal, but only a small proportion of research has the policy impact it might have. Most researchers are not trained to create policy impact from their work, engagement with policy makers is not encouraged or rewarded in most settings, and the communication of scientific findings occurs within the academic community but rarely outside it. There are exceptions, but little is done to systematically link scholarship to policy.

When the broad gap between evidence and policy is addressed in academic settings, the proposed solution is generally to disseminate research findings to the media and perhaps policy makers. This approach is helpful, but overlooks the importance of information flow from the policy world into research settings. The creation of a two-way policy bridge between researchers and policy makers can help to ensure that research addresses issues relevant to policy and that research findings are communicated in real time to policy makers who often must make decisions quickly. We propose a model to create tighter interaction between research and policy domains.

We define strategic science as research designed to address gaps in knowledge important to policy decisions, derived from the reciprocal flow of information between researchers and policy makers, and communicated not only in scholarly publications but also in forms relevant to policy makers. Strategic science can complement traditional programmatic science to better realise the potential impact of scholarship on policy. We have developed a model of strategic science (figure), which we have applied to our work on nutrition policy, obesity prevention, and food systems research,[1–11] but have designed the model to be broadly applicable for other fields of research.

The first step in our model is to identify agents for change and create reciprocal information flow between researchers and these actors. Investigators can be aware of questions that are relevant to policy, but it can also be helpful to identify and seek input from individuals or institutions in a position to make policy advances. Such input can uncover important gaps in knowledge that have not been identified in

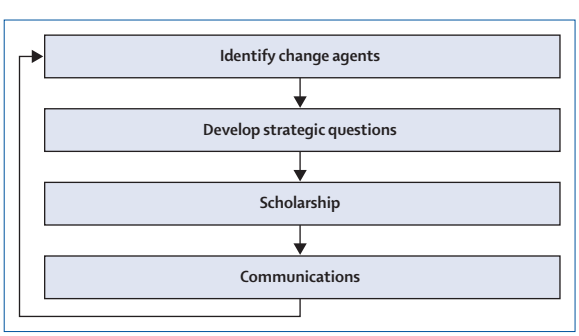

Figure: **A model of strategic science designed to enhance links between science and policy**

the scientific literature and generate information flow back to the policy world. Change agents include elected leaders at any level of government, key individuals in regulatory agencies, legal authorities and legislators, the media, non-governmental organisations, and global institutions, such as the World Bank, the World Trade Organization, or WHO.

The second step is to develop strategic questions. Interactions between researchers and policy makers can help identify the questions that need to be addressed for the policy process to be fully informed. These questions can join with those produced by traditional scientific discovery to maximise the effect of science on policy. Examples of issues that could be emphasised by policy makers are the projected impacts of competing policy approaches to a problem, costs of implementation, public support for various policies, or how different approaches to framing a policy might affect perceptions.

The third step in the model is to undertake strategic studies. The strategic questions will generate the substance of the research itself, including research designs, hypotheses, and analyses.

The fourth step is to communicate information to strengthen the policy bridge. Traditional communication of scientific information through peer-reviewed, academic publications is essential because it ensures the work meets scientifically rigorous standards. Shortening the review and publication process is important to bring research in step with the real-time needs of policy makers. More ways to communicate research findings before publication could also be helpful. In addition, the communication of information back to policy makers is a key step. Scientific publications tend not to be helpful to policy makers in the absence of policy briefs, short summaries of what is known on an issue, and clear statements of the relevance of evidence to specific policy questions.

These four steps can create a feedback loop by which policy informs research and the results of research inform the policy process. Once established, the loop can create fruitful intersections of evidence and policy.

We believe that there is much unrealised potential for research to contribute to the common good by having the evidence base communicated more effectively to policy makers, and for scientists to be aware of the important questions in the policy world. This process begins with better information flow between scientists and change agents but also requires: infrastructure to support such activity within research settings; more effective convening of relevant parties; better means of communicating evidence in a timely way; and incentives for scientists to pursue this work and communicate it to change agents. Government and foundation funding for such work, and private sector funding where conflicts of interest can be avoided, could help advance this agenda for strategic science with a policy impact.

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