Comment

Bridging the gap between science and policy: the importance of mutual respect, trust and the role of mediators

Karen Bultitude, Paola Rodari and Emma Weitkamp

ABSTRACT: Around the world there are widespread efforts to ensure that policy decisions are based upon a sound evidence base, and in particular to facilitate closer integration between the research and policy communities. This commentary provides an overview of the current situation in different parts of the world relating to the opportunities that exist for policy makers to assimilate scientific findings, as well as the existing barriers perceived by both the policy and research communities. Mutual trust and respect between the relevant parties emerge as crucial factors in successful collaboration. Skilled mediators are also considered essential to ensuring effective communication; this may be via third parties such as NGOs, or news services and online portals to convey, 'translate' and place in a policy context the scientific findings. Mechanisms for improving researchers' communication skills as well as increasing their awareness of the need to communicate proactively with the policy community are also considered in order to inform future practice in this area.

Evidence-based policy making – the formulation of policies that are strongly influenced by the available scientific results – has gained ground at local, national and international decision-making levels, and across a wide variety of disciplines. Originating from the more specific 'evidence-based medicine' concept,[1] evidence-based policy making is now applied across all areas of public administration in various parts of the world (see for example Nutley,[2] Sanderson,[3] Young,[4] Frenk,[5] Honig and Coburn,[6] Gillwald and Stork[7]). Formal mechanisms to support scientists' involvement in the policy process may be through ongoing processes (such as sitting on advisory or policy committees) or one-off in response to a specific issue (for example contributing to a consultation exercise or being commissioned to conduct specific research). The titles of programmes or slogans might change, but fostering the links between science and policy is universally considered a priority.

Evidence-based policy making, however, is not a linear process, from science to policy. Involving scientists in policy-making can influence scientific research in itself, changing the focus so that it better meets the needs of society, as well as more directly influencing policy. Moreover third parties, acting at the interface between science and policy, such as organised groups of citizens and stakeholders, can be formally or informally included in the production of evidence-based policies.[8,9,10,11]

The articles within this commentary analyse and discuss the existing barriers and opportunities in the communication between researchers and policy makers. Focusing on specific examples from around the world, the purpose is to offer generally applicable reflections and relevant case studies for future developments in this area.

It is clear that there is no one single solution to ensuring that researchers and policy makers are able to collaborate effectively. Not only do differences in practice exist across disciplinary fields and policy areas, but relevant distinctions are also apparent between different geographical locations. The MASIS report[12] for example highlights that within Europe there is a wide diversity: some countries already embed the aforementioned formalised procedures for incorporating science-based knowledge and scientific advice in policy making, whilst others are currently in the process of creating such mechanisms, and others still have no such procedures established or planned. From the articles presented within this commentary it is evident that such diversity is not unique to Europe: in the USA the distributed and highly polarized political system encourages an emphasis on networked and bottom-up actors, whilst in China the research-policy interface is embedded and recognised within official

government structures. Within large, diverse, developing countries such as Brazil, institutionalised mechanisms are rare, with strategies instead set up on a case-by-case basis. There are also differences according to the policy level involved: in Portugal there is evidence that at national level policy makers consider scientific evidence essential for informing environmental policies, however there is a more mixed picture at local government level.

Several challenges have been recognised which create barriers and prevent the smooth running of research-policy interactions.[13,14] Many of these challenges stem not from obvious potential external factors such as bad will or political-economical interests, but instead relate to unfortunate and unintended issues relating to the communication mechanisms and practices used. Policy makers and researchers work in different environments, with different agendas, jargon, priorities and goals, and in general there are few opportunities to meet directly. In addition, the case studies within this commentary highlight issues around the multiplicity of information sources, and the 'superabundance' of advice, making it difficult for policy makers to know which sources to trust, or even to find appropriate sources efficiently. Another potential issue relates to the original research design: many programmes do not include policy implications as a specific goal, thereby requiring such efforts to be added on at a later date. There are however innovative solutions being trialled that have been shown to assist in positioning existing research towards policy outcomes, such as policy-oriented portals and news alert services. International mandates have also been identified as both a positive and negative factor: as noted here by Constantini in the experience of the WWF, they can serve as levers for justifying engagement and discussion of policy issues. Conversely Sardo and Weitkamp report that Portuguese researchers feel they have *less* potential influence in environmental policy formulation due to the majority of decisions being made at European level.

Although arguably a depressing panorama at first sight, such situations are not unique to the research-policy interface, and progress has been made both to better understand the nature of these problems and to experiment with possible solutions. Knowledge brokering and the provision of more informal support structures to facilitate communication between researchers and policy makers have previously been identified as important factors within health policy settings.[15] In a wider disciplinary context, science communicators may therefore have an important role to play as interpreters (through mass media), facilitators (through training and consultancy) and intermediaries (through new, dedicated channels). The case studies presented here also highlight the importance of physical proximity and direct contact between policy makers and researchers in order to streamline policy access to scientific knowledge, provide a crucial two-way flow of information, and help to ensure that the scientific information is set within a wider context. Rodari, Bultitude and Desborough provide evidence that training is perceived as important to both raise researchers' awareness of potential policy-oriented opportunities, and to improve their skills at interacting with policy communities. Heightened awareness leads to greater proactivity, which can reap major benefits: as Wen describes here, it is remarkable that a 20-year long programme of embedded research-policy interactions in China has its origins in the (uninvited) submission of a proposal by four scientists to the then leader of the Communist Party of China. Where such clear political structures are less apparent 'flexible but coordinated' networks can be highly successful, although Chambliss and Lewenstein stress that such networks strongly benefit from links both to local communities and to national and international networks. The importance of mutual trust and respect between the policy and scientific communities is also highlighted by multiple authors: it is not enough to have access to individuals or information; the different parties must also feel empowered to work together and utilize such sources.

The case studies within this commentary provide examples of many strategies and factors that lead to increased uptake of scientific data within policy making processes. Firstly, three papers present contrasting international examples of interactions between scientists and policy makers. Sardo and Weitkamp present the results from interviews with policy makers and researchers involved in environmental policy making at both national and local levels within Portugal. At national level in particular, they found that policy makers perceived the incorporation of scientific evidence as a 'stamp of quality'. Wen demonstrates the benefits and challenges of institutionalised science-policy decision making in a Chinese context. An important lesson here is that the scientists involved must maintain their objectivity: politicising academic research can lead to serious problems for the entire process. In his contribution Constantini highlights the significance of NGOs (non-governmental organisations) in acting as a mediator, using the specific case of WWF's role in fisheries policy. Although he emphasises the importance of maintaining a distinction between academic and NGO institutions and roles, Constantini

demonstrates the benefits NGOs bring to international decision making. The second set of papers provide specific examples of innovative 'mediation' activities, drawing on research evidence to highlight their successes and identify recommendations for future programmes. Rodari, Bultitude and Desborough present wide-ranging data relating to policymaker and researcher experiences of the science-policy interface within Europe, as well as a discrete case study using the SCOOP project, consisting of a News Alert Service and Communication Masterclasses for researchers. This example relates specifically to socio-economic sciences and humanities research, demonstrating the relevance of evidence-based policy making outside the traditional scientific and medical contexts. Chambliss and Lewenstein describe a novel online information source designed to provide impartial climate change evidence for use at state, regional and local levels. This resource was developed by a bottom-up, regionally based network and deliberately applied communication theory (such as 'frames') to enhance the uptake of the information provided. Finally, de Silva Rosa and Carneiro provide an overview of the interface between science and policy making in Brazil, including key initiatives to 'bridge the gap'. In the complex society of Brazil, involving other players in the communication between scientists and policy makers (such as NGOs and citizens' organisations) is very important to create discussion and consensus on specific policies, involving in the process communities' knowledge and opinions.

There are many factors that can contribute to whether scientific evidence is taken into account during decision-making processes. It is also important to keep in mind that the *implementation* phase of the policy making cycle is also important – it is not enough to simply create a policy; the scientific evidence must be embedded throughout the policy cycle. However the evidence from the case studies presented here is that there is an increasing appetite for evidence-based policy making amongst both scientists and policy makers. The experiences of these authors will serve to inform future developments in the science-policy arena.

Notes and references

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Authors

Karen Bultitude is Director of Research in the Department of Science and Technology Studies, University College London. Her expertise combines practical delivery of science communication events, activities and training with robust academic research, especially in the areas of live (face-to-face) and digital environments. E-mail: karen.bultitude@ucl.ac.uk

Paola Rodari works for SISSA Medialab as Project Manager for several action/research projects aiming to engage the general public in science, and foster citizen participation in science and society dialogue. She designs and delivers training courses in science communication for researchers and museum staff. She teaches Museums Studies in SISSA's Master in Science Communication.
E-mail: paola@medialab.sissa.it.

Emma Weitkamp is a Senior Lecturer in Science Communication at the University of the West of England, Bristol, where she teaches on an innovative MSc in Science Communication. Her research interests centre on the intersection between environmental science, journalism and policy making. She is also Editor of Science for Environment Policy, a weekly, e-newsletter designed to facilitate transfer of information about quality research to the policy community. E-mail: emma.weitkamp@uwe.ac.uk.