



# Scientists versus policy-makers: Building capacity for productive interactions across boundaries in the urban water sector



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## ARTICLE INFO

### Article history:

Received 9 March 2016

Received in revised form 1 August 2016

Accepted 1 August 2016

Available online xxx

### Keywords:

Boundary work

Action research

Science-policy interactions

Dramaturgy

Performance

## ABSTRACT

This paper critically reflects on a trial process for building the capacity of researchers to influence policy-makers in the urban water sector in Australia. Framed as an action research inquiry, this study brought together multidisciplinary teams of researchers to make policy pitches to simulated panels of current and former politicians, senior bureaucrats and industry representatives. The simulations were analysed with respect to tactics for pitching, methods of communication, use of evidence and participants' reflections on the experience. Participants effectively used scientific research evidence to support a broad vision of water sensitive cities, but were less effective in articulating risk analyses, assessing economic impacts, and proposing appropriate policy instruments to enable their proposed visions to be operationalised. Dramaturgical analysis highlighted the implications of positioning scientists versus policy-makers, which 'typecast' participants in roles that restricted scientists' ability to credibly argue policy ideas. It is proposed that teams of scientists and policy-makers 'rehearse' together to manage expectations, develop arguments that will cut through in policy contexts, and produce ideas that shape and are shaped and improved by the policy context.

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## 1. Introduction

A scan of the literature in various disciplines of the sciences, from climatology to criminology, will readily reveal a common concern across fields with the influence that science exerts over politics and policy (Leith et al., 2014; Pannell and Roberts, 2009; Sarewitz and Pielke, 2007). By and large, the general consensus is that policy outcomes and the public would benefit greatly from greater scientific influence over these domains. Governments themselves in recent years have joined the chorus, looking for ways to restructure and better incentivise their research sectors to produce work that can be translated into commercial, industrial or applied terms (e.g. Vaitilingam, 2010; Department of Education and Department of Industry 2014).

How such an outcome could be achieved though is far less clear. Very often, the focus has been at the system level – what structures, institutions or pathways are needed to ensure that

science is routinely integrated into the policy-making process. Some high-level discussions and reports of recent years, such as the Science Advice to Governments Conference in 2014, have produced a burst of activity on science-policy pathways, making the assumption that scientific uptake into policy is a question of better institutional and procedural arrangements (e.g. Doubleday and Wilsdon, 2012; Office of the Prime Minister's Science Advisory Committee, 2014; Wilsdon and Doubleday, 2015). It is often implicit, if not explicit, that the task then is to collectively engage in barrier removal and open up dialogue and pathways to ensure that scientists and policy-makers are more strongly interconnected and policy-making procedures are reshaped to be more attentive to scientific evidence.

Often tied to this stream of thought is a strong tradition in the sciences of an idealised role for scientists and researchers that is rooted in impartiality, rigour and 'frank and fearless' advice-giving. Discussions of the role of scientists as individuals within a political and policy atmosphere tend to emphasise the criticality of impartiality and a strict avoidance of any advocacy roles. This sentiment is perhaps best summed up as the *honest broker* model by Roger Pielke Jr., which has become highly influential in the sciences (Pielke, 2007), and is echoed in other accounts of the scientific role in advisory positions (e.g. Jarvis, 1998). Yet these

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assumptions are largely untested and are rooted in the normative morality of the sciences, rather than critical examination of the science-policy nexus. It also somewhat conveniently shifts the locus of the problem away from the scientific community itself and onto politicians, policy-makers and governments.

However, what limited evidence there is on questions of scientific influence in *specific* cases seems to indicate that it is just as often scientists themselves and the nature of their work that largely inhibits the science-to-policy pathway. Two studies of policy development and scientific influence by Hemsley-Brown (2004) and Poulos et al. (2007) found that it was the barriers created by researchers, such as specialised jargon and vague conclusions that prevented public servants from using and incorporating their work. Science-to-policy case studies by Guldin (2003), Cherney and Head (2010), Pannell and Roberts (2009) and Holmes and Clark (2008) further establish that motivated individuals and champions are integral to fostering the communication and translation processes that facilitate science-to-policy translation. Such roles might even contradict the philosophy of the honest broker – Guldin's own work demonstrates that advocacy in a policy context, so long as it is done carefully and within a clear framework of rules, often has benefits far outweighing the risks (2003). These findings dovetail quite often with many popular theories of the policy-making process that come from political science, such as Kingdon's (1984), which emphasise the role of 'policy entrepreneurs' and committed advocates that help forge coalitions able to drive through major policy changes.

Our research has focused on this conundrum as it applies to the urban water sector in Australia, specifically how capacity might be built in scientists as agents to have more influence in the policy sphere. Through our research, a consistent picture of shortcomings on the part of scientists themselves has emerged from policy-makers and politicians, similar to the findings mentioned above but more explicitly focusing on communication, translation and outputs (e.g. Laing, 2015; Laing, 2016).

So what might constitute effective capacity-building for urban water scientist to counter this problem? What critical skills or attitudes do scientists require to wield more influence over policy-makers? And what elements should be in place within research organisations institutionalise science-to-policy pathways? These are some of the questions we explored through the development of a 'Science-to-Policy Capacity-Building Workshop' in mid-2015. This two-day workshop was designed specifically to incorporate available practices and new innovations into a programme that could be both informative for participants and experimental for researchers. The results and analysis of this first trial are presented in this paper as a starting point for a broader discussion about the capacities needed for scientists to influence policy.

## 2. Methodology and conceptual frameworks

Our project team endeavoured to construct a simulation that would allow policy-makers and scientists to directly interact with each other in a setting comparable to what might be expected within an actual policy-making process within government or industry. This simulation, framed as an action research inquiry (Reason and Bradbury, 2008), had three primary objectives. The first was to allow both policy-makers and scientists to interact in a specially-created professional environment in a way that allowed each to experience their alternative perspectives and assumptions about policy-making and for both to provide stimulus and input into a structured scenario. The second was to observe the strategies and tactics employed by participants in advancing (in the case of scientists/participants) or scrutinising (often in the case of policy-makers and politicians) various policy proposals generated from scientific research. This second

objective would allow some thought as to how pre-existing lobbying and advocacy literature might be tailored to help scientists and researchers employ better strategies and tactics, as well as critically reflecting on the limitations to using those same strategies. The third objective was to test the policy relevance of research conducted by the Cooperative Research Centre for Water Sensitive Cities (CRCWSC) and identify scientists who could act as spokespeople to the media.

### 2.1. Capacity-building action research inquiry

The action research inquiry spanned 8 weeks from May to July 2015, conducted as a trial for further educational programs within the CRCWSC. The intended practical outcomes were to increase capacity to connect research to policy-making processes, and to engage with the media, among a cohort of urban water researchers. The initiative was framed as action research as outcomes for both action and research were sought. Firstly through fostering increased capacity to influence policy among a group of researchers, and secondly to research whether our capacity-building approach was effective.

Individual CRCWSC researchers (n = 13) were invited from four broad research programs relating to water sensitive cities (WSC): society (sociology, economics, law); water sensitive urbanism (ecology, hydrology); future technologies (environmental engineering); and adoption pathways (transdisciplinary). Participants were invited on the basis of the policy relevance of their research, the ability to communicate their research effectively, and willingness to be involved. Participants were allocated into four multi-disciplinary groups to present research-driven policy proposals to simulated panels representing two state government cabinets, a local government council and a water authority board. Panels were comprised of former cabinet ministers, senior state government bureaucrats, water industry executives, and elected municipal government officials. The four groups prepared written submissions about: (1) delivering a more robust economic valuation framework – to a simulated Victorian state cabinet; (2) enabling the use of alternative water sources for potable use – to a simulated Queensland state cabinet; (3) redefining water services for a water utility of the future – to a simulated water authority board; and (4) Delivering enhanced local government green asset management frameworks for a water sensitive city – to a simulated local council.

The panel presentations were structured as follows: in the first 20–30 min each group presented their submission; in the following 20 min the panel questioned and probed the submitters; then in the next 20 min the panel conducted a session where they discussed among themselves whether to agree with the submissions of the presenters. In the last 30 min there was an opportunity for the panel to provide feedback and suggestions to the group. For reference, following the event all scientist/research groups were also put through a separate session of communications training by a professional media-training organisation to examine and improve the communications strategies employed by participants in prosecuting the case for their proposals to a broader audience, which is not the subject of this research.

A qualitative approach was adopted to draw on a range of data sources during the action research inquiry, examining the narratives produced by each group and the way they were presented. The policy submission documents prepared by each group were captured. Presentations to each simulated panel and the feedback from each panel were video-recorded and transcribed, and notes were taken from workshop discussions. Videos were analysed by assigning transcribed text into three main categories: (1) articulating policy context, (2) articulating proposals, and (3) articulating evidence.

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