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Observations on the Workshop on Water Policy Innovations, Institute of Water Policy, National University of Singapore, 6 February 2017

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Cecilia Tortajada convened this workshop at the Institute of Water Policy, National University of Singapore (NUS), with presentations by Robert Wasson (NUS), Jose Albiac (Universidad de Zaragoza), Martin Keulertz (American University of Beirut), Scott Valentine (NUS), Taikan Oki (University of Tokyo), Vladan Babovic (NUS), Dajun Shen (Renmin University of China), Louis Lebel (Chiang Mai University), Marian Neal (Stockholm International Water Institute), and James Horne (Australian National University).

The workshop discussions were disparate but fascinating, traversing a very large topic.

Box 1. Framing questions: innovation in water policy making.

1. Why is the topic being discussed a policy 'innovation'?
2. Has it been possible to implement this 'innovation'? If not, what have been the constraints? Have they been overcome?
3. If it has been implemented, has it contributed to improvements in management and development practices, governance and/or finance-related decisions in the water or water-related sectors?
4. Can the innovation be considered context-specific or can they be duplicated in similar environments?
5. Can the innovations be modified to respond to changing economic, social, environmental and climate-related situations? If so, how?
6. What have been the lessons?

Box 1 sets out Tortajada's questions, meant to frame interventions and discussions, although the conversation ranged quite broadly.

This short note provides some observations on the issues raised in the workshop.

Backdrop to discussions

At the outset, I would make five comments.

First, policy making is ongoing, evolving and changing over time for the most part, and involves powerful interests going beyond government. It rarely starts from a blank slate. Governments do face complex problems, with complex interests arguing disparate positions. Innovation comes from a range of sources, including academics, stakeholders and

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government. Established governments rarely implement 'innovative policy' unless there is an identified problem, or an established consensus that something is missing from the panoply of policy or is no longer in sync with societal views. Much of what is written appears to be solutions in search of problems, and this is quite unhelpful. As Neal indicated clearly, good problem identification at the front end of the policy process is critical. New governments sometimes have a much broader canvas. They have an opportunity to act as a 'new broom', determined to do something differently. This new approach might be innovative or just different.

Second, to characterize a policy approach or action as innovative, we need evidence of how it represents an improvement over the status quo. Something that is run-of-the-mill in one country *may* be innovative in another if it incorporates an approach to bypass existing impediments, resulting in improved outcomes (addressing any manner of issues, including water scarcity, water security, water quality, risks from floods, etc.). If something hasn't been implemented, we can call it potentially innovative, as its overall impact remains uncertain.

Third, much of the academic literature explores new ideas, not policy. The development of ideas is the first step towards policy; it might provide a way (or a new way) to frame a discussion, as a precursor to policy development. But ideas and indeed many 'policy positions' are not really of themselves policy, because they are very high-level and don't give much weight to practical considerations, including implementation and impact.

Those in the environmental world are well familiar with New Environmental Governance (NEG), which is sometimes cast as an innovative approach to environmental policy. But is it? Does it actually improve outcomes? What are the benefits from its introduction?

Cameron Holley and others argue in their 2012 book on NEG that there is little evidence to support the proposition. To quote: "There has been surprising little investigation of whether, how or to what extent NEG institutions actually deliver their purported benefits in practice" (loc. 446). They continue: "A fundamental question that haunts the NEG literature is whether, when and how effective collaboration can be achieved without succumbing to collective action problems, excessive transaction costs … and lowest common denominator solutions" (loc. 454).

Much changed in the last three decades, including in the structure of policy-making processes, in governance, and in the content of policy. It is clear that the character of public participation changed over this period. But there was little systematic take-up of NEG at a policy level.

Fourth, a recent review of innovation in the water policy-making literature more generally suggests only limited interest among academics in water policy reform and innovation (Moore, von der Porten, Plummer, Brandes, & Baird, 2014). To summarize: "The systematic review of the water policy reform literature found that the majority of authors are not referring explicitly to innovation" (p. 367). Out of an initial pool of 368 articles from a five-year period, only 39 mentioned innovation in a substantive sense. There was no clear consensus about what is meant by innovation. Some authors suggest a change in policy, while others require a transformative dimension.

Innovation might be applied to many aspects of policy making (for example, organizational structure, regulation or instruments of governance, social conditions for technological change, engagement processes, or management paradigms). For example, Richard Thaler and Cass Sunstein, in their very approachable *Nudge* (2008), illustrate how a new way of thinking about a problem can readily lead to very different outcomes. Basic behavioural

economics has already had significant and innovative water policy impacts, illustrated by the impact of water-efficiency labelling schemes. Valentine discussed the use of games ('gamification') as an approach to urban water demand management. These experimental approaches offer potential innovations in water policy, but will need careful specification, and may have limited applicability.

And fifth, climate change and the new level of uncertainty it creates are driving much of the current discussion. Population growth is clearly a second major driver.

The place of new ideas such as complexity and real options assessment

Wasson noted that the core ideas in the study of complexity were already impacting policy (for example, in road infrastructure design). What is the role of these ideas in water policy, where thus far the impact is not apparent?

Babovic looked at the adequacy of 'net present value' as a tool for assessing the viability of new infrastructure projects under climate uncertainty, arguing that real options analysis appeared likely to provide better-quality answers. But it has not gained much acceptance, even though it has been around for some time. Why?

One issue that flows from both these interventions is whether existing social institutions and governance arrangements (such as the role of politicians and governments) needs re-examination when fundamentally new approaches such as those suggested by Wasson and Babovic are being considered. For example, does the level of independence from government of decision makers need to change with a change in the level of risk and uncertainty around each decision?

A focus of Babovic's discussion was the role of adaptive management (used here to mean a systematic approach for improving resource management by learning from management outcomes) in policy making. One of the key questions here is establishing when adaptive management is useful and when it might be counterproductive. A recent literature review in *Biological Conservation* found that there are very few examples where the application of adaptive management to ecological systems has been successfully undertaken and documented, and has resulted in demonstrable changes in either policy or management (Westgate, Likens, & Lindenmayer, 2013).

Innovative technological and policy instruments

Albiac's case study illustrated how history, culture and different social values affect technological and water policy acceptance across countries, with a focus on Australia, the EU, the US and Israel. Shen's case study on the benefits of market-based approaches made similar points about the innovation and policy framework needing to adapt to the circumstances of the specific institution and country. One observation from this discussion was that a dominant policy paradigm may limit the uptake of innovation.

Keulertz's case study on Syria/Lebanon groundwater provided a front-end idea for new policy. What will be needed is an institutional framework to deliver it in practice. Lebel's comment provided an example of how a new technology (poly pipes) had driven users in an area in Thailand to rework an existing institutional network to provide a way for this new technology to be introduced in a sustainable way. It was not transferable, but underscored

the point that potentially innovative technology and policy instruments need appropriate governance arrangements to deliver outcomes.

Reiteration that good water policy is not just about infrastructure

Oki outlined how Japan's approach to changing risks from climate change, in the context of its declining population and poor governmental fiscal position, had changed significantly. Water policy had moved from supporting traditional pure infrastructural responses to emerging water problems to consideration of non-structural measures. This change has included significant changes in governance arrangements. This 'policy innovation' is potentially repeatable elsewhere, illustrating that solutions to many contemporary water infrastructure problems go well beyond traditional engineering responses.

Industry product governance driving water outcomes

Lebel's review of aquaculture in South East Asia reflected on a gap in pursuing certain types of water issues, perhaps reflecting the absence of certain skill sets, or emphasis within the institutions charged with managing water issues. Here Lebel (and his co-author) posited that voluntary standards and certification represent a water innovation. Businesses can readily see that their interests require specific water quality outcomes. The driving force here is business interest, but the outcome is better water quality relative to the default. This review provided an undeniable observation that policy innovation around water quality is much more limited than innovation related to water allocation. With the problem identified, we can see that potentially useful responses fall down because of inadequate governance (limited compliance and enforcement), or because of gaps reflecting the need for collective responses.

Conclusions

Innovation can draw on ideas at a basic level, but a policy process should start with a problem to be solved. It passes through option selection (including identification of innovative ideas or methods and processes that could address the problem), through institutions and technological development, to policy and policy implementation, and then assessment of results. Each area is important.

If we are to believe some recent reviews, one might question whether some 'big-ticket' movements in academic study that might be characterized as 'policy innovations', such as NEG and adaptive management (applied in a water context), are innovative policy, as they don't appear to be having much impact on outcomes. A similar conclusion might be drawn about integrated water resource management, if the conclusion of the 2008 Biswas paper still holds. So before we call something 'innovative' we need to ask for evidence of its impact. We might also ask whether we would we be prepared to run with it if we had the chance.

It is relatively straightforward to talk about some policy innovations and their positive impact – such as turning to water-efficiency measures rather than supply responses to address a supply shortfall or restrain demand (e.g. Australia or Singapore's water efficiency labelling scheme), or to develop new water rights frameworks, which have had a big impact in some limited countries. Policy innovation seems most likely to come from concerted

examination of difficult problems, and the ability to experiment and to insert new solutions into a policy process in time of crisis to break down the normal (abundant) impediments to change.

The diverse conversation at this workshop provided many examples to reinforce the notion of the 'local character' of water. Strong and potentially innovative ideas need to be adapted to individual circumstances to turn them into innovative policy responses. Innovations are often transferable, once they have been adapted to local circumstances and customs. Learning where something will not work is as important as learning where it might work.

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