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BOOK REVIEW

Wilder, M. 2017. Special Festschrift "Ways of knowing: Helen Ingram and water scholarship", *Journal of the Southwest* 59(1&2): 1-393.

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The special double issue of the *Journal of the Southwest*, edited by Margaret Wilder, celebrates the career of Helen Ingram as a scholar, mentor and policy advisor. In a festschrift of nearly 400 pages, 26 authors put forward 18 essays about water policy and politics. Of these, 13 are peer-reviewed research articles "written specifically in Helen's honour by an impressive group of invited scholars, many of whom were mentored and supported by Helen during their careers" (Wilder, 2017: 5).

The volume is a reminder that a study of water resources can be rich in detail, ethnographic-like "thick description" of human behaviour (Geertz, 1973). The finely textured analysis of rich empirical data displayed in many contributions is remarkable, as well as indicative of Ingram's emphasis on local context, equity and power. In that regard, the volume could have been called Political Ethnography of Water: Equity, Democracy and Politics. It also reflects the excellent work carried out by Wilder in selecting and directing authors to produce a coherent volume that makes an important contribution to the literature on water governance.

Ingram's early work focused on the Colorado River and water politics in the American West, as well as on US-Mexico water negotiations. Her research in the 1980s and 1990s coalesced around the topics of public participation and inclusive water governance, and culminated in the theory of policy design and citizenship developed together with Anne Schneider. The theory argued that some policy-making systems are not so much geared towards the identification and resolution of problems but rather manipulate the public images of particular groups of citizens as being more or less deserving of governmental support. The theory of the "social construction of target populations" has since been adopted and applied by scholars around the world to study a wide range of issues (Schneider and Ingram, 1997). Ingram's work in the 2000s was dominated by three key themes: democratic governance in environmental policy (e.g. Ingram and Schneider, 2016), pluralism and multiple ways of knowing in public policy (Feldman and Ingram, 2009; Lejano and Ingram, 2009) and thinking about policy narratives as networks (e.g. Lejano et al., 2013). The thread running through Ingram's diverse work is an emphasis on equity, fairness and democratic and deliberative governance – values which set her writing firmly in the tradition of political ecology.

There are four sections in the special issue. The first is a reflective introduction in which Margaret Wilder, Peter Gleick, Henry Vaux Jr.; Ingram herself and her daughters – Mrill and Maia Ingram – provide personal accounts of her career and character. It presents a scholar of the highest calibre, who took on many challenges to rise to pre-eminence in the worlds of public policy and water policy. I would recommend this part to all early career researchers as a source of strength and inspiration. Especially

refreshing were Ingram's words on mentoring junior colleagues: "I am actually aware of the arduous and consuming challenges of an academic career, and the notion that a young colleague would divert their attention to serve my own research is wrong" (Ingram, 2017: 9). I devote the remainder of this essay to the 13 substantive, peer-reviewed articles in this special issue.

The contributions in Section 2 have been compiled to indicate how Ingram's conceptual work inspired other scholars. Marcela Brugnach evokes the framework of multiple ways of knowing – a topic to which Ingram contributed generously – in order to analyse water policy process in Italy and Spain. Multiple ways of knowing explicitly acknowledge diverse and equally valid perspectives on water use held by different users, and mark a stronger emphasis on equity and the inclusion of non-experts in policy (Feldman and Ingram, 2009). Brugnach describes examples of the Upper Guadiana Basin in Spain and the Apulia region in southern Italy, where unregulated groundwater pumping for irrigation was eventually brought under control by the state partly due to the European Union Water Framework Directive legislation. The article demonstrates that multiple ways of knowing is an important tool in conflict prevention and resolution, and offers a list of useful questions for policy analysts and policy-makers alike to enhance knowledge co-production. Putting equity above other considerations in water policy, Clay Arnold offers an anthropological model of the moral economy of water. He builds on the work of Paul Trawick, who emphasised six operational principles for equitable water allocation, among which uniformity and proportionality are the most important. The theory is then illustrated with the examples of the Colorado-Big Thompson Project and Colorado Water Plan to prepare the basin for water shortages in 2050. It is noteworthy that the essay does not refer to the work of Elinor Ostrom and colleagues, which perhaps indicates that the moral economy approach is different from the design principles of Ostrom. More work to articulate the relationship between the two approaches would be useful.

Two articles that follow deal with the ways water policy innovations emerge, cross boundaries and impact people's lives. An emphasis on the policy context in the spread of policy innovations can be traced to Ingram's earlier work (e.g. Schneider and Ingram, 1997). However, the critique of the global spread of policy innovations, such as Integrated Water Resources Management (IWRM), has become much sharper in her later call to abandon 'panaceas' in water policy (Ingram, 2008). Taking this work as a departure point, Dave Huitema and Sander Meijerink focus on the global diffusion of policy innovations such as decentralisation, privatisation and river basin organisations (RBOs). They suggest that innovations begin by emerging in a community, develop through trials and experiments as 'proof of principle' and are then diffused by the 'constituencies' that take them on (Huitema and Meijerink, 2017: 86). They draw on their edited volume on RBOs around the world and conclude that the outcomes of the global spread of RBOs have rarely been satisfactory in terms of equity, democratic participation and impacts on the ground. Much in line with Ingram (2008), the authors emphasise the importance of context, politics and interests in how policy models travel across jurisdictions. Anne Wessels and Raul Lejano take a different approach to the travel of policy innovations. They zoom into the textured picture of waterway and waterfront development in Denver and Tucson with a focus on how this policy model is translated in a local context – a process also referred to as 'policy translation' (Mukhtarov, 2014). Consequently, they claim that "narrative analysis shows that when policy choices are being made, globally hegemonic forces are interpreted and engaged by locally specific stories" (Wessels and Lejano, 2017: 127). It is worth noting that Wessels and Lejano apply the framework of narrative-network – a conceptual innovation developed in collaboration with Ingram (e.g. Lejano et al., 2013). It posits that policy is best understood through narratives told in a field, and that narratives are always hosted in networks. Thus, according to these authors, networks and narratives must be considered parts of the same whole.

This section deals with water management in North America, another subject of Ingram's research. Stephen Mumme discusses the salinity crisis between the US and Mexico, in which water quality has been a contested issue. Following cumbersome decades of negotiations an agreement was crafted in

1973, which set a precedent in the bilateral regulation of transboundary rivers worldwide. The author draws attention to the successful application in resolving this crisis of "substantive principles of reciprocity, fidelity, reliability, and flexibility" (Mumme, 2017: 139). The detailed account of the negotiations lays bare the complexity of transboundary water management. In her article on Colorado River Delta management, Andrea Gerlak recounts the successful tale of the International Boundary and Water Commission (IBWC) in instituting a participatory process of decision-making. In line with Ingram's work on inclusive water governance, two lessons emerge from this study: firstly that the maintenance of an active network of stakeholders is more important for a participatory process than the scope of participation itself. Secondly, the early involvement of various stakeholders is extremely important, and broadening participation to other actors at later stages of the policy process does not resolve conflicts.

Jeremy Schmidt considers Alberta's water management and the implications of sand oil development for water quality, indigenous rights and deliberative democracy in Canada. He starts the essay with Ingram's own dramatic exit from the high-level government panel overseeing the project in 2011 – an event that was reported by the national media in Canada. The puzzle Schmidt tries to resolve is the shift from Public Trust Doctrine for surface and groundwater to the private ownership and water markets. By connecting settler colonialism and the community-centric development of lands with the on-going dispossession of Indigenous populations, his story is that of Big Oil and federal/provincial government appropriating the land and water rights of local communities. The story is told with much empirical detail and would qualify as policy ethnography. A potential next step could be more conceptual and theoretical reflections on the case in order to produce a model of how Big Oil engages in controversial projects. In the next article Nicolas Pineda Pablos applies the 'social construction of target populations' – Ingram's and Schneider's signature work explaining how policy design may privilege the powerful and punish the marginalised. Pablos's analysis is valuable not only thanks to his masterful understanding of the framework and context of the Independencia Aqueduct in Mexico but also because his work may be considered as action research given that he has been both a researcher and a journalist/columnist in the area.

Finally, Section 3 discusses water policy issues in the American West – the area of Ingram's long-standing interest. A testament to her influence in this region is the inclusion of Ingram's work in Marc Reisner's definitive volume on water politics in the western US – the 'Cadillac Desert' (1993). The section opens with an article by Denise Lach and Steve Rayner on the awareness and use of probabilistic weather and climate models by water managers in the Pacific Northwest, Los Angeles Basin and the Potomac River Basin. The authors compared the use of models by water managers in 2000 studied together with Ingram (e.g. Lach et al., 2006) and the situation in 2015. Overall, they noted an increased use of models, which are co-produced by a number of agencies and citizens alike thanks to web-based platforms and crowdsourcing technologies. This shift to an acceptance of models by public managers is remarkable and explained by "the easy access to hourly and daily information on many different Web-based platforms, along with regular meetings and webinars with information producers" (Lach and Rayner, 2017: 255). That said, the models did not diminish the importance of local and specific knowledge of particular river basins. As the authors claim in their conclusion, "without this local expertise, our respondents told us, you cannot understand what the models are telling you, cannot identify anomalies in system behaviour or predict the range of system responses" (p. 256).

Hirt et al., discuss Arizona's thirst for and from continuous growth. They look at how the water problems of the state's two biggest cities, Tucson and Phoenix, have historically been resolved by increasing supplies, from the Central Arizona Project to the 2016 legislation weakening the restrictions on the use of groundwater. The continuous augmentation of supplies "discourages the kinds of social, political, legal, economic and technological adaptations needed to live within our limits" (p. 290). According to the authors, Arizona still needs to make the right choice for its future. Remarkably, Martin, Ingram and Laney highlighted this issue back in 1982. Augmenting supplies and keeping all options open for more water is the 'holy grail' for farmers in Arizona, and little seems to have changed in 35 years. It

is also possible to increase supply through inter-basin water transfers. Welsh and Endter-Wada discuss the allocation of water in the dry region of Nevada where Las Vegas cries out for ever-increasing amounts of water. The authors claim that, for a lasting consensus on the allocation of water resources, not only the powerful but all stakeholders must be involved – land developers, industry and the property sector. Equity and fairness are principles that should provide a normative guide in the politics of water. Kazuto Oshio, in turn, discusses the allocation of water from the Imperial Irrigation District to the growing Metropolitan Water District of Southern California and the political negotiations associated with the deal. The analysis spans three decades of negotiating, which culminates in an agreement in January 1990. Twenty-five years later, in 2015, the agreement seems to be sustainable for both parties. The author closes the article with a call for a more critical take on water markets so that ecological and traditional values of water are also recognised and managed. This echoes Ingram's (2010) claim for a case-by-case evaluation of the suitability of water markets and inter-basin water transfers in the new contexts. Finally, Joseph DiMento discusses California's new Sustainability Act to put the brakes on groundwater pumping in the drought-prone state. The three laws passed between 2014 and 2017 to regulate groundwater use are collectively known as the Sustainable Groundwater Management Act (SGMA, or SIGMA). The author claims that the "successful implementation of SGMA must confront the fact that groundwater management is a political issue" (p. 381). This calls to mind the multiple ways of knowing and deliberative water governance advocated by Ingram.

Ingram's work has mostly focused on the American West and the US and North America more generally, as illustrated by the articles discussed here. However, her theoretical contributions have also been of much interest to scholars in understanding complex dynamics in other regions of the world. Her normative orientations towards equity, fairness and participation have formed the backbone of this special issue, which therefore serves as a mirror on a versatile and influential career.

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