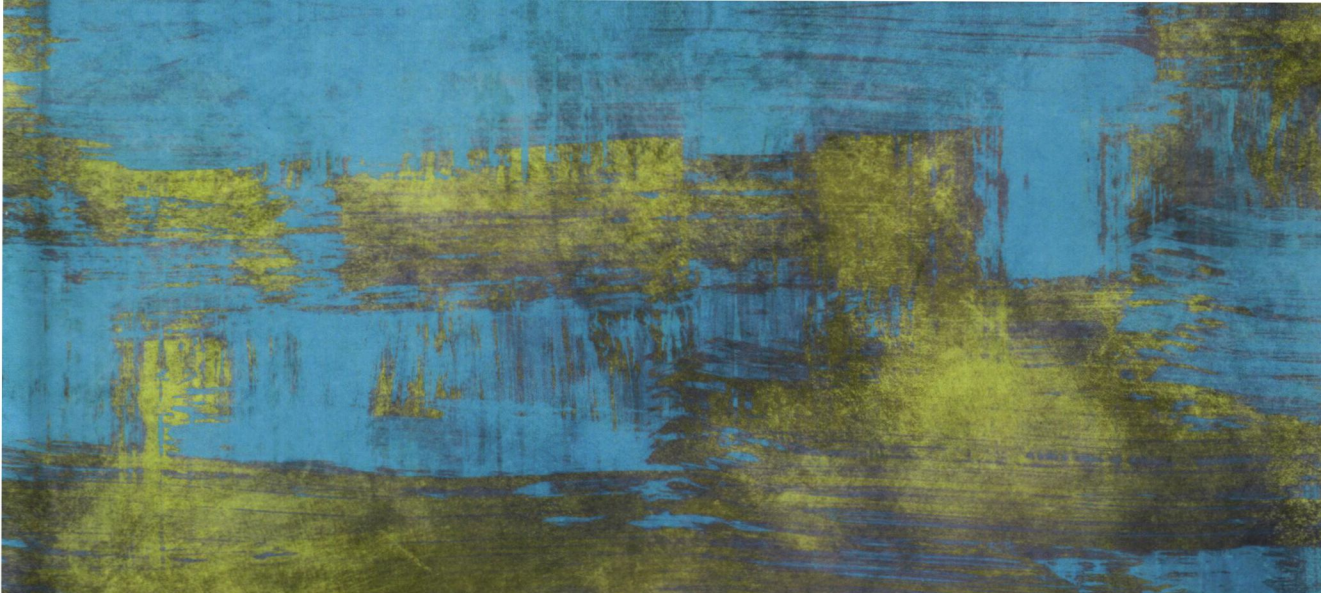




WATER CRISES AND GOVERNANCE

**REINVENTING COLLABORATIVE INSTITUTIONS IN AN ERA
OF UNCERTAINTY**

Edited by
Peter Leigh Taylor and David A. Sonnenfeld



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Water Crises and Governance

Water Crises and Governance critically examines the relationship between water crises and governance in the face of challenges to provide water for growing human demand and environmental needs. Water crises threaten the assumptions and accepted management practices of water users, managers and policymakers. In developed and developing world contexts from North America and Australasia, to Latin America, Africa and China, existing institutions and governance arrangements have unintentionally provoked water crises while shaping diverse, often innovative responses to management dilemmas. This volume brings together original field-based studies by social scientists investigating water crises and their implications for governance.

Contributors to this collection find that water crises degrade environments, place untenable burdens on stakeholders, and produce or exacerbate social conflict, undermining ecological and social conditions that sustain effective collaboration. At the same time, water crises can promote institutional change that “resets” governance, promoting unusual and creative responses appropriate for local contexts. The studies in this volume provide evidence that, while water crises pose serious threats to environments and societies, they also provide opportunities to learn from experience and recraft water governance with coherent visions of more ecologically and socially sustainable futures.

The introduction and chapters 1–9 of this book were originally published as a special issue of *Society & Natural Resources*.

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Peter Leigh Taylor and David A. Sonnenfeld
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Jennifer Bellamy, Brian W. Head, and Helen Ross
Society & Natural Resources, volume 30, issue 4 (2017), pp. 404–420

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Scales of Power in Water Governance in China: Examples From the Yangtze River Basin
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Society & Natural Resources, volume 30, issue 4 (2017), pp. 421–435

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Rescaling Knowledge and Governance and Enrolling the Future in New Zealand: A Co-Production Analysis of Canterbury's Water Management Reforms to Regulate Diffuse Pollution
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The Practice of Water Policy Governance Networks: An International Comparative Case Study Analysis
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Women's Crucial Role in Collective Operation and Maintenance of Drinking Water Infrastructure in Rural Uganda

Resty Naiga, Marianne Penker, and Karl Høgl

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When Policy Hits Practice: Structure, Agency, and Power in South African Water Governance

Jan Janosch Förster, Linda Downsborough, and Machaya Jeff Chomba

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Emma S. Norman

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Water Crises and Institutions: Inventing and Reinventing Governance in an Era of Uncertainty

Ensuring sufficient availability of water for human and environmental needs is one of today's most pressing global challenges. The demand for water—for human consumption, sanitation, power, industry, agriculture and livestock, and other uses—has accelerated more than twice as fast as the rate of population growth over the last century (United Nations [UN] 2013). Efforts to secure and manage water supplies with more than 45,000 major dams and diversions and through unsustainable pumping of groundwater threaten or degrade ecological habitats in the world's rivers, lakes, and wetlands (Postel 2010).

Today's challenge of providing and governing water supplies in sufficient quantity and quality, and across diverse temporal and spatial contexts and scales, involves multiple, interrelated water crises (Linton 2010; Bakker 2014). These crises likely will continue to deepen in complex and unpredictable ways, exacerbated by dramatic shifts in population, demand for water, droughts, severe weather events, and other changes associated with global climate change (Pahl-Wostl 2015).

An extensive and growing literature examines the role that governance plays in unintentionally creating water crises, as well as in shaping responses to the uncertainties of societies' water futures. *Governance* moves beyond government regulation to extend decision-making roles and responsibilities to nonstate actors with a stake in the environment, including formal and informal organizations and practices (Agrawal and Lemos 2007; Eberhard et al. this issue).

Water crises are events in social–ecological systems that are “perceived as significant threats to core social values and structures and to life-sustaining systems (ecological, economic, political or technological) that require urgent responses under conditions of significant uncertainty” (Bellamy et al. this issue, citing Galaz et al. 2011; Homer-Dixon et al. 2015). Resource problems are confronted at specific historical moments and in specific contexts. Multiple, interrelated water crises challenge water users', managers', policymakers', and interest groups' assumptions and accepted practices of managing the resource. Yet crises also provide opportunities for experimentation with new approaches to problems that may generate lessons relevant elsewhere (Ison, Collins, and Wallis 2015; Bellamy et al. this issue).

Aims of this Issue

This special issue of *Society & Natural Resources* brings together original studies exploring water crises around the world, with important implications for environmental governance in the context of uncertainty and change. Contributions examine water crises and governance in the developed world (Australia, France, New Zealand, the United States), the Global South (Cameroon, Nicaragua, and Uganda), and the semiperiphery (China and South Africa), respectively, from a variety of disciplinary perspectives.

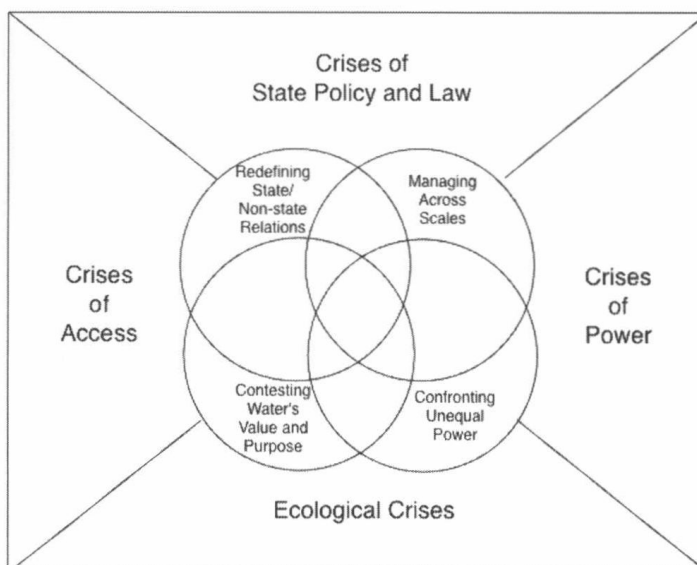


Figure 1. The thematic foci for this special issue: four interrelated sets of global crises in water quality, provision, and governance. *Source:* Authors.

The cases in these studies involve social actors' responses to interrelated water crises triggered by four sets of factors: (1) ecological problems; (2) material and technical infrastructure issues; (3) significant state policy and legal changes; and (4) asymmetrical power exercised by social actors (see Figure 1). In all the cases, governance actors struggle simultaneously with more than one of these crises, though one may dominate. In developing countries, access to safe, secure, and affordable water remains paramount. Problems of coordination of complementary and competing water uses across multiple scales more often take center stage in developed countries.

These studies focus on four sets of cross-cutting governance challenges: (1) struggles to redefine relations between the state and other social actors around water; (2) efforts to manage and coordinate water management across scales; (3) narrowing of access and participation because of actors' inequality; and (4) conflicts over how to ascribe value to water and shape the purpose of governance.

As demonstrated convincingly by the contributions to this special issue, water crises weaken effective governance with respect to both natural resources and the social conditions that sustain effective collaboration. At the same time, such crises also provide opportunities, albeit difficult, even painful ones, for participants to approach water governance with coherent visions of more ecologically and socially sustainable futures.

The Collaborative Turn in Water Governance

Until the 1970s, water resources management was shaped by a "hydraulic paradigm" that approached water management mainly as a technical and scientific problem to be managed by experts. The top-down nature of this approach, according to critics, gave insufficient attention to complex, multiscale interrelationships among material and technical factors on the one hand, and the political, economic, and social institutions that shape human behavior (Molle 2009; Pahl-Wostl et al. 2012). A paradigm shift emerged (Pahl-Wostl 2015) that aimed to better handle water's complex technical and human interconnections.