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Chad Staddon & Christopher A. Scott

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EDITORS' INTRODUCTION



Putting water security to work: addressing global challenges

Chad Staddon ^a and Christopher A. Scott^{b,c}

^aDepartment of Geography and Environmental Management, University of the West of England, Bristol, UK;
^bUdall Center for Studies in Public Policy, University of Arizona, Tucson, USA; ^cSchool of Geography and Development, University of Arizona, Tucson, USA

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Introduction

Over the last decade, the concept of water security has emerged from its origins in a niche of studies of international security and hydropolitics to become a common currency of researchers and policy makers. Indeed, in some quarters it seems even to be supplanting the dominant position hitherto occupied by 'sustainable water management', as well as the Integrated Water Resources Management framework. A simple trawl of international water-themed conferences revealed that, as early as 2012, seven used the term 'security', while only four used the term 'sustainability'. Sustainability is, it seems, out of fashion, while security is all the rage. Moreover, problems as otherwise diverse as US–Mexican border relations, undocumented migration into Europe, malnutrition in the global South and growing energy demand have been increasingly reframed as problems of environmental security. Since the 1990s Canadian and American security services have often asserted that environmental change can be a territorial security threat, particularly with regard to growing conflict over scarce resources ('resource wars') and in-migration (cf. Homer-Dixon, 1994; Klare, 2001). Global institutions such as FAO, UNEP, UNESCO, the World Water Council, Global Water Partnership, World Bank and World Economic Forum have enthusiastically seized on the concept of water security (Gerlak et al., 2018) – as have regional groupings such as the Gulf Coordination Council and the Asian Development Bank – establishing it as a central organizing principle for water management in the twenty-first century. So, sustainable water, with its Brundtland-era associations with intergenerational equity and the triple bottom line, seems to have shifted to backstage, and water security is now very much 'in'.

This special issue of *Water International* is predicated on the contention that water security is a concept that upon careful examination reflects a conflict of world views, and with it, of political approaches. Since it appears to be a paradigm for water management in the twenty-first century it is crucially important that users are clear about what it does, and does not, signify. In particular we argue that it is important to better understand the way the concept may be deployed to replace the more democratic

water governance implied by 'sustainable development' with a state-dominated and 'territorialist' form of environmental governmentality. This brief essay introduces the concept of water security in terms of its history and the main themes associated with it, and offers a critical multidisciplinary reconceptualization which could provide needed common ground within a burgeoning discourse already showing signs of friction and rupture. Further analysis and critical reflection on the emergence of water security along with energy and food security are presented by Gerlak et al. (2018), Varady, Albrecht, Gerlak, Zuniga, and Staddon (in press), Staddon and James (2014), and Scott et al. (this issue).

A critical perspective on water security

The securitization of environmental discourse is part of a decades-long process that is not wholly coincident with the sustainable development movement and indeed seeks to reposition the state and civil society as key actors in environmental management. Though there are antecedents, the debate on the securitization of environmental issues emerged particularly in the 1990s, along with the publication of works by Norman Myers (1994) and Hillel Shuval (1992). As Liverman (2009) points out, there is a danger, and a reality in some cases, that discourses of environmental (or water) security may take us back to the days when it was often asserted that climate dictates culture and character. Speaking on behalf of an entire generation of imperialists in the early twentieth century, the geographer Victor Cousins put it like this (quoted in Febvre, 1932, p. 10):

Give me the [physical] map of a country ... and I pledge myself to tell you, *a priori*, ... what part that country will play in history, not by accident, but of necessity; not at one epoch, but in all epochs.

Unsurprisingly, theorists of this school tended to give the most flattering characterizations to the European and North American nations of the middle and upper latitudes. Of course much work has since been done to explore the complex relationships between physical and social spaces, but it is clear that in some corners a simple determinism endures. After all, judging by the popularity of recent work linking social change to climate change (e.g. Afolayan & Adelekan, 1999; Diamond, 2005; Ezra, 2001; Homer-Dixon, 1994), often resting on a Social Darwinist foundation,¹ we feel compelled to caution that glibly made links between climate, conflict and migration are not empirically justified and raise concerns about the securitization of climate discourse. This securitization, we argue, can operate in at least two ways:

- (1) (Overt) political securitization of water issues – where a state, or prominent actors within it, found policy towards an extra-territorial 'other' on the view that environmental change (short or long term) is to blame. Such views are likely to see resources as things to be hoarded and/or violently acquired, and environmental politics as a zero-sum game. This view is most likely to see links between environmental change and conflict, including armed conflict.
- (2) Economic securitization of water issues – where a state, or prominent actors within it, may not adhere to point 1 above, but view correct policy as policy that

uses market mechanisms to allocate increasingly scarce resources, and indeed transforms environmental assets into financial ones to facilitate this process. This is essentially Washington Consensus ideology² and proclaimed loudest by those national actors who feel they have the economic power to 'win' this game.

Of course, these realist and neo-realist international relations discourses can overlap within a single larger discourse formation, with the resultant danger that more progressive theorizations of water security are squeezed out.

Our analytical perspective draws heavily on critical political ecology, defined here, following Tim Forsyth (2003, p. 20) and others, as the 'development of an analytical approach that is biophysically grounded yet conscious of social and political constructions' of such key terms as 'environment', 'nature' and 'natural resources'. Beyond incorporating the marginalized and disenfranchised, the postulation of a 'critical political ecology' also signals a deeper concern with the ways in which meaningful discourses *about* the hydrosocial world are produced, which subsequently result in material practices of management and exploitation of that same hydrosocial world. A higher-level summation, to which we will return in the concluding section of this introduction, asks us to reframe water security in terms of *security of what and for whom*. From our perspective, 'water security' shares with its 'sustainable water' predecessor certain problems of political ontology with which progressive scholars and activists have long grappled. Challenging these deficiencies is not an option – progressive scholars must attempt to take the water security concept away from realist and neorealist geopoliticians, both through reframing the ontological problems it is meant to address, and through epistemologically resituating it with respect to what Ranciere and Swyngedouw have called the 'postpolitical'. In other words, we seek to challenge politically regressive framings by proposing more emancipatory and democratic ones. We are not the only ones exploring this terrain; Beck, Foucault, Latour and others have travelled here too. Chantal Mouffe (2005, pp. 40–41) summarizes post-democracy as follows:

What is needed is the creation of forums where a consensus could be built between the experts, the politicians, the industrialists and citizens on ways of establishing possible forms of co-operation among them. This would require the transformation of expert systems into democratic public spheres.

This reframing is of critical importance for thinking about environmental security and water security because it strikes at the very heart of what is at stake: the politics of the changing relationship between society and the natural world. It is more than a decade since Lucy Jarosz (2004), citing Marc Augé, asked the key ethical question: 'How do we retain a sense of the other and a sense for the other in terms of environments and the societies living within them? How do we understand ourselves and others in critical and compassionate ways?'

This is difficult terrain, not least because different participants in this burgeoning discourse have tended to mobilize the concept differently. Political scientists and governments have often tended to prioritize the securitization dimension of water security, seeing it in terms of the relation between water and political and/or military interactions between states, pre-eminently in the contemporary Middle East. These

studies and policy orientations move the concept close to the idea of hydropolitics or even, as Schulz (1995) put it, the 'hydropolitical security complex' (see also Klare, 2001; Ohlsson, 1995). Others have conceived of water security in terms of security *from* water-related risks and hazards:

Achieving basic water security, both harnessing the productive potential of water and limiting its destructive impact, has always been a societal priority. To capture this duality, water security is defined here as the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies. (Grey and Sadoff, 2007)

But who is to decide where the line between acceptable and unacceptable water-related risks can be drawn? Is it acceptable that the risks of drought or flood, however objectively large or small, are disproportionately borne by the most marginalized and politically weak parts of society? Whereas the discourse of sustainable water is often talked about in terms of the triple bottom line, the water security discourse more readily overlooks issues of social impact. Desperately needed are democratic mechanisms for both defining the boundaries between acceptable and unacceptable outcomes and giving the resulting laws and policies social legitimacy.

Consider the role that normalizing science has played in this transition from ecological modernism, to sustainable development, to environmental (and water) security. Scientific knowledge production tacks back and forth between the evolving understandings of individual researchers, teams and institutes and the demands and constraints imposed by institutions, including funding institutions and accreditation bodies, to characterize the water security issue in particular ways. The endeavours of mapping, measuring, calculating, and providing models make the multiple identities of water and the environment quantifiable, manageable and controllable. Water then becomes a resource knowable only through the respective kinds of expertise developed by ecologists, biologists, geologists, engineers and agronomists, who tend to triangulate onto the same discourse of crisis and response (Cook and Bakker, 2012). Repetition and the piling up of opinion certainly trends in apparently preordained directions. Alternative knowledges, such as those not framed within Euclidean space, find it increasingly difficult to gain traction: for example traditional or non-Christian knowledges of water's ontology. In other words, 'what was unknown has become fully knowable; what was mysterious is now readily imaginable; *and the whole has become eminently governable*' (Peace, 2002, pp. 536–37). This governability of water easily ties itself in with concerns with carrying capacity and limits to resources, or as Luke (1999, p. 142) has put it: 'Encircled by grids of ecological alarm, [climate change discourse] tells us that today's allegedly unsustainable environments need to be disassembled, recombined and subjected to the disciplinary designs of expert management.'

Here we would point to the all-too-naturalized tendency of most policy makers and scholars (ourselves included) to found their work on the assumed triple threat of climate-change-induced water scarcity, population rise and declining ecosystem services values. And governmentality does not need to be total or smooth, as a study of water politics in post-communist Bulgaria revealed: 'The Djerman-Skakavitsa [water diversion] controversy reveals ragged, unstable, perhaps unknowable, spaces and analytics of

government that hardly correspond to the well-oiled machine of simply-theorised disciplinary biopower' (Staddon, 1998, p. 365).

What then does this mean for committed and progressive scholarship on water security? First, we contend that securing safe quantities and qualities of water (and the services it provides) for people and the environment is the only ethically acceptable perspective, and one that stands in contrast to realist environmental politics. Our scholarship must be about better understanding the challenges that real people in real communities are facing every day to secure safe water, and the often difficult choices they are forced to make to do so. Thus, we believe strongly in the need for detailed empirical fieldwork into the multiple dimensions and experiences of water security in multiple geographical contexts. This means also that we are interested in the underlying dynamics of water insecurity, particularly at the household scale (Jepson et al., 2017). Finally, it means that we are as interested, or perhaps more interested in, issues of water governance than we are in the natural science of climate change or population growth, for the root cause of environmental crisis is to be found not in how humans interact with nature, but in how they interact with each other. As Barry Commoner (1974, p. 32) put it in *The Closing Circle*: 'The debt to nature which is the measure of the environmental crisis cannot be paid person by person, in recycled bottles or ecologically sound habits, but in the ancient coin of social justice.'

Water security – the preferred discourse of global institutions

Despite the theoretical shortcomings of water security – or indeed perhaps because of its malleability and multiple adaptable meanings – the concept has been widely adopted by global and regional organizations spanning the multilateral, governmental and NGO spectrum. Early use of 'water security' accompanied the rise of broader human-security framings that sought to place access and control over water for human use (FAO, 1996) alongside ecosystem needs and ecological flows (UNEP, 2009). The Millennium Development Goals, focused on targets to fill the supply gap, were clearly predicated on human needs. As multilateral organizations of the United Nations and private-sector groupings increasingly employed water security discourse, countries, too, adopted the conceptual approach emphasizing access, equity, and ecological compatibility (though perhaps in ways that are different from the temporal, intergenerational sustainability of the Brundtland era).

Soon to jump on board the water security bandwagon were nonstate actors with global reach, including the World Water Council, the Global Water Partnership and the World Economic Forum. It is noteworthy that particularly the latter, representing business and commercial interests that extend far beyond those corporations that trade in water as a commodity (e.g., Coca Cola and Nestlé) or water services (e.g., Veolia), have seen water security as an attractive framing. Similarly, other UN bodies (UNESCO), regional groupings such as the Gulf Coordination Council and the Organization of American States, and universities (not least our own, the University of the West of England and the University of Arizona) have programatically enshrined water security.

Whither water security?

Water security, set as a target (a condition to be achieved) and a process (a capacity to be developed), serves multiple institutional interests. Yet, the conceptual appeal of water security must be tempered by limits to its application in operational terms. What does it mean to be water secure? Having achieved a state or condition of water security (if this is indeed definable), what constitutes a loss or reduction of water security? Will water security in the world of the Sustainable Development Goals and the Paris Climate Accord actually contribute to human and ecological outcomes? Reflecting on these and related *what-comes-next?* questions, the articles in this issue underscore our conviction that water security will continue to evolve, taking on new dimensions of social and environmental justice, access and outcomes, as well as offering a forward-looking perspective on the central role of water in broader environmental governance. Indeed, water security has already begun to morph into broader conceptions of human and planetary security.

Overview of articles in this special issue

With this conceptual and institutional backdrop, we as researchers and programme leaders who identify with water security themes approached the editor-in-chief of *Water International* with a proposal that has led to the present special issue. Here we briefly characterize the most salient findings and assertions of the articles that follow.

Wade addresses water security through a water-justice lens. Under a broader understanding of environmental justice, the article assesses (in)equity in resource distribution, diversity of stakeholders and communities, participation in decision making, and political power dynamics. Applying the analytical framework to the case of the Lake Naivasha cut-flower industry in Kenya, Wade demonstrates that governance structures can be co-opted by powerful commercial interests – which raises her central question of whether water justice is an elusive concept.

Nkhata considers water security from the perspective of benefit sharing, posing the question of whether the allocation of water and associated benefits is well suited to address local and basin-scale conflicts inherent in water security initiatives. Also taking a case-study approach (focusing on the Zambezi River basin), he shows that for benefit sharing to be successful, it must take account of and build on long-term relationships among multiple interest groups, often with divergent goals. It is only through such partnerships that water security can be a framing goal to share benefits.

Scott et al. seek to synthesize human- and resource-security understandings with a separate and not always compatible framework: the water–energy–food nexus. Tracing the historical emergence of food security and energy security, they place water security as the thread that interconnects the others at the level of resources, institutions, and multiple securities.

Albrecht et al. switch geographical scales to consider the difficult politics of trans-boundary water. Drawing on case studies from across the Americas, they argue that, 'Given the complexity introduced when political borders transect resource systems, in

addition to the highly place-specific nature of water management, we expect to find a range of multidimensional water-security challenges and an equally broad array of institutional responses.¹ The case studies presented are richly drawn and intrinsically interesting, but the key central message of their analyses is that 'the chief compounding factors related to the transboundary context are national-sovereignty concerns and uneven power dynamics; political, economic, and physiographic asymmetries; and insufficient institutional capacity.' In other words, there is a burgeoning challenge to find new governance mechanisms, not based on the zero-sum logics of Bismarckian nation-states, to better manage water across boundaries.

Staddon et al. present research findings that illuminate the household decision-making dynamics of adopters and non-adopters of a water collection and storage technology. Through survey research with households in three districts in central Uganda, the authors discovered that the most important determinants of the decision to adopt ferro-cement rainwater harvesting technologies is age of head of household and membership in or affiliation with a promoting organization. With this greater understanding of adoption trends and drivers, the authors contend that governmental and non-governmental organizations may be able to make more informed decisions on where to focus their attempts to better support communities or households that may previously have been marginalized.

Notes

1. Social Darwinism refers to the notion that societies are shaped by their physical environments, to which they adapt, just as species adapt.
2. The Washington Consensus was formed in the late 1980s to promulgate the idea that only private property transacted in a free market with minimal government interference could result in rational allocation of resources and the creation of robust economies.

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ORCID

Chad Staddon  <http://orcid.org/0000-0002-2063-8525>

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