Book Review


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Water and Cities in Latin America is a timely publication now that humanity is grappling with the development challenges of the Anthropocene and the Urban Age. The focus on the gaps in the conceptualization and operationalization of the links between water and sustainable development is crucial not only for Latin America but globally because over half of the human population currently resides in towns and cities and this figure is projected to rise to as much as 60\% in just over a decade from now. The publication deepens the existing scholarly discourse on urbanization, ecosystem services, and sustainability in relation to water supply services and less researched issues like wastewater, sanitation, and groundwater (Richter \textit{et al.}, 2013). While a majority of the case studies are gathered from Latin America, the last chapter draws insights from green infrastructure and watershed protection in cities in the United States of America and the vast backgrounds of the contributing authors and editors enriches the transdisciplinary perspective of the entire publication, made up of four parts containing 15 chapters in total. In analysing urban water management in Latin America, the authors identify both challenges and opportunities for sustainability which are of global relevance, with particular regard to the investigation of the spatial and social dynamics of cities.

There are three chapters in Part 1. In Chapter 1, Aguilar-Barajas demystifies the challenge of urban water management as multi-dimensional and requiring income distribution, social policy, and proactive policies. This is an apt reminder of the interdependence between the economic, social, and

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environmental pillars of sustainable development on the one hand and the sustainable management of natural resources like water, on the other hand. Chapter 2 specifically highlights the nexus between climate change and ecosystems, and urban water management; Mejía-Betancourt stresses the minimal conceptual and practical integration between urban planning and water supply services and the resulting negative impacts on natural hydrological systems. In Chapter 3, Cox and Börkey identify the problem of the lack of sustainable financing for water and sanitation services and propose three opportunities: (a) improving the efficiency of operations or streams of revenue from markets and public sources such as tariffs, taxes, and transfers (3Ts) for the longer term; (b) repayable finance for the short to medium term; and (c) private sector participation within an appropriate institutional and regulatory environment. The three chapters in Part 1 thereby set the research agenda, highlighting the need for a paradigm change in the urban water and sanitation sector based on inclusive development, and a departure from reactive adaptation models to proactive risk management using innovative financing within a framework of integrated, better regulated, and stronger institutions.

In Part 2, Chapter 4, Pena analyses the most pressing challenges to water availability and sanitation services in São Paulo and other States in Brazil: scarcity, pollution, and flooding; focuses on the role of the largest water supply and sanitation company in the Americas – Companhia de Saneamento Básico do Estado de São Paulo (State Water Utility – SABESP), the main organization responsible for implementing São Paulo’s water and sanitation policy; and states the importance of political consensus for achieving universal access, concluding with recommendations for achieving consensus. Chapter 5 outlines how human actions and societal responses to water scarcity reflect power asymmetries, social inequalities, and long-term inadequacies of social institutions for water services; Chapter 6 stresses the need for wastewater governance to go beyond technocratic approaches and understand the underlying human factors that drive lack of access; Chapter 7 highlights the limitations of heavy dependence on political considerations rather than technical or scientific information; Chapter 8 argues for an integrated monitoring and planning of groundwater use, including broad stakeholder participation, in order to foster the necessary institutional conditions and incentives for sustainable groundwater use. The Chapters in Part 2 thereby contribute to the growing academic discourse on inclusive development and the importance of human resources capacity (Cavill & Saywell, 2009; Oduro-Kwarteng et al., 2015), a bottom-up approach in the provision of infrastructure and the development of water and sanitation governance structures (Mehta & Movik, 2011), and further research into sanitation, wastewater governance, and groundwater which are issues that have historically received relatively less scholarly focus (Obani & Gupta, 2014; Shen, 2015).

Part 3 consists of four chapters proposing practical steps to proactive decision making for the management of water risks and climate uncertainties and other challenges highlighted in Parts 1 and 2; this is closely linked to the scholarly discourse on balancing water security, costs, and sustainability (Chong, 2014). Based on a meteorological analysis of Hurricane Alex, its flood impacts in the Monterrey Metropolitan Area, Mexico, and the drivers, Sisto and Ramírez in Chapter 9 call for a replacement of the reactive adaptation model with proactive integration of hydrological risks for flash flood management. This call is in line with the precautionary approach to environmental uncertainties. Furthermore, Chapter 10 provides an invaluable lesson for increasing the economic and social benefits of environmental clean-up projects and thereby promoting proactive environmental management and wastewater governance in particular. Posada, Bonells, and Durán illustrate this with the example of the Rio Bogotá watershed, its flood risks, and the Hydraulic Upgrade and Environmental Recuperation Project for the Rio Bogotá with its challenges. Chapter 11 focuses on addressing the institutional and social challenges to sustainable urban water management. Following their analysis of environmental protection and restoration in
Quito, by the Empresa Pública Metropolitana de Agua Potable y Saneamiento (EPMAPS – the Metropolitan Water and Sewage Company), the authors conclude that: (a) solutions to the problems of the urban hydrological cycle and sustainability require planning and implementation with the full participation of all the key stakeholders; (b) the construction of engineering works to solve the problems must also foster a sense of ownership in the local residents through providing recreational opportunities; and (c) the relevant institutions must be strengthened to execute, maintain, and expand the environmental restoration projects. The final chapter in Part 3, Chapter 12, again highlights the need for additional investments in water storage or new sources, as well as monitoring of water demand, climate, streamflow, and other input parameters. The authors, Miralles-Wilhelm et al., thereby lay a strong foundation for the discussion of green growth and innovative funding options in the final part of the publication.

The three concluding chapters in Part 4 analyse the role of green growth and green infrastructure in urban water development as evidence that investing in the environment can also benefit the economy and societal development. This advances the scholarly knowledge on practical, proactive economic instruments for decoupling economic growth and climate change, as there are no unequivocal trends noticed even during economic recessions (Obani & Gupta, 2015). In Chapter 13, Browder projects green growth as a new, adaptive, and arguably better approach to addressing the challenges of urban water and sanitation provision. Chapter 14 affirms the important role of water funds and makes recommendations on how to maximize the positive impacts of their growing numbers across Latin America, presenting case studies from Ecuador, Colombia, and Brazil. Chapter 15 draws on examples of watershed protection and green infrastructure in cities in the USA to provide insights for other parts of the worlds, also advocating for the development of a knowledge pool and practices that can mutually benefit all urban dwellers. The knowledge and capacity discourse adds to the growing scholarship on leadership in knowledge and capacity building in the water and sanitation sector (de Montalvo & Alaerts, 2013).

This publication does what it sets out to do: Part 1 highlights the links between urbanization and sustainable water and wastewater management in the Anthropocene; Part 2 identifies the paucity of transdisciplinary research, lack of inclusive development, and environmental, economic and institutional challenges; Part 3 proposes practical ways of overcoming the multi-dimensional challenges; and Part 4 concludes by linking investments in the environment with economic and social benefits. The use of illustrative hydrological graphs and tables in many chapters also enriches understanding of the technical analysis. Nonetheless, considering that the cases highlighted by the authors provide insights not just for Latin America, but indeed the whole world, the publication misses an opportunity to engage with an important instrument for equitable access to water and sanitation – the human right to water and sanitation. This is quite remarkable against the background that the water rights movements in many parts of Latin America played a crucial role in the evolution of the right and the subsequent adoption of the Bolivia-sponsored United Nations General Assembly Resolution recognizing access to clean water and sanitation as a human right, in 2010 (Barlow, 2009). Furthermore, urbanization could potentially spur industrialization and virtual water transfers and thereby exacerbate scarcity (Oki & Kanae, 2004; Ramirez-Vallejo & Rogers, 2004; Shankar & Jayasri, 2015), but the publication does not expressly address this possibility.

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References


