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BOOK REVIEW

Urban water sustainability: constructing infrastructure for cities and nature, by Sarah Bell, Abingdon, UK, Routledge, 2018, 185 pp., ISBN 978-1-138-92990-6 (hardback), ISBN 978-1-315-68081-1 (ebook)

This book presents a broad overview of the water technologies and systems currently in use in the provision of sustainable water infrastructure for cities. After the opening context, the book gives a brief treatment of sustainable development in relation to water in the international setting, and a short description of two of the dominant water resource management systems, Integrated Water Resource Management System (IWRM) and Integrated Urban Water Management (IUWM), as well as mentioning the emergence of water-sensitive cities and blue-green infrastructure as development concepts. The next chapter summarizes a selection of socio-technical characteristics of infrastructure building. Chapter 4 describes the five theoretical paradigms – sustainable development, ecological modernization, socio-technical systems, political ecology and radical ecology – the author uses to analyze water technologies and systems. How the paradigms are to be used in such analysis for the remainder of the book is explained thereafter. The analyses are grouped by the type of water service function: demand management (chapter 5), sanitation (chapter 6), drainage (chapter 7), and supply over two chapters, for reuse (chapter 8) and desalination (chapter 9). Each of these chapters begins with an introduction akin to a statement of the problem, with relevant city and/or country examples of their implementation. Next, a description and explanation of the technical solutions is followed by an analysis of the socio-technical systems through each of the five paradigms that were laid out in chapter 4. The author concludes by asserting that the technological options for sustainable infrastructure are at the same time 'a social, political and technical choice … [with] consequences for water, people, cities and nature' (174). The process of selecting among the alternatives 'is not between objective technical rationality and political ideology … [but] between different assemblages of technologies and values which are constantly emerging and evolving. Different framings lead to different analysis' (178), thus the rationale for the structure of the book and the analyses provided.

A scholarly contribution of this book is the attempt to integrate engineering aspects with the discussion of social and ecological implications of the different technical water systems, which is not as common in social science literature on the field of science, technology and society as it should be. The author, a professor of environmental engineering, has covered the engineering principles of the relevant water technologies and systems in a way that is easy to understand for non-technical academics, which is important in bridging the communications gap between scientists/engineers and social science/policy academics in water research. As such, this book is a good starting point for tertiary students in the humanities and social sciences interested in urban water provision and planning to gain a more holistic picture of its socio-technical systems, through the exploration of their social, technical and ecological aspects and the dynamics amongst them.

If the intent is to help both sides (the technical and the social science fields) see the lenses of the other, it is uncertain whether this book offers a breakthrough interdisciplinary understanding of the subject matter necessary to attract the attention of engineers or

technologists who are not already inclined to read a work of social theorization of his or her vocation. But in its own way this book does advance the undertaking of bridging the knowledge and pedagogy gap between the two sides. Hopefully, more such interdisciplinary pursuits will be seen in the literature in the future.

While a book of less than 200 pages cannot examine in detail all of the social, technical and ecological aspects presented, nor was it intended to, it would have made for a more comprehensive treatment if the various water resource management systems, such as IWRM and IUWM, had been put through the paradigm analyses, in a dedicated chapter. Similarly, any developments in catchment management systems and the management of natural water sources are visibly missing in the coverage of supply, which focuses on reuse and desalination.

For demand management, the use of pricing mechanisms is only given the equivalent of a one-page treatment, though there is a large body of literature on the topic. And the use of statutory instruments in building codes and the role of green-building certification and product labelling in contributing to water efficiency are given little attention. Sustainable drainage is also only briefly addressed, mostly on its concept, functions and some points about its community and ecological values. Perhaps the latest examples of how these programmes are increasingly being turned into policy and/or legislative instruments for overall demand management policy could have been delved into under the five theoretical frameworks.

In summary, this book is an admirable endeavour in presenting current technical systems through the lenses of social and ecological theories. It highlights, in the context of urban water services provision, the importance of the continued efforts in city-building with sustainable infrastructure, and the implications and consequences of the choices and alternatives in their social, ecological and technological contexts.

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