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Book review
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The World's Water Volume 8: The Biennial Report on Freshwater Resources

Peter H. Gleick *et al.* Island Press, Washington, DC, USA, 2014, ISBN 13 978-1-61091-482-6, £23·99, 420 pp.

The first Biennial Report on Freshwater Resources 1998–1999, prepared by the Pacific Institute for Studies in Development, Environment, and Security, California, was published in 2000. In the eighth Biennial Report, Peter Gleick, the Institute's president, and his research team continue to provide insights and a valuable update on the worldwide abstraction, supply and consumption of freshwater resources. These are supplemented by, among other aspects, an update of regional data relating to the progress towards meeting Millennium Development Goals and country-by-country data on the improving access to safe drinking water and sanitation.

The presentation of a volume of data tables can often prove rather uninspiring but the Pacific Institute has found a format that, broadly unchanged since the first volume, through some excellent articles and briefing notes, which comprise the first 220 pages of the volume, is both attractive to delve into and instructive. The introductory articles, each about 5000 words long, all address contemporary issues that have international relevance. They deal with subject matter relating to global water governance, private sector engagement in the water sector, sustainable water jobs, 'fracking', water footprints, seawater desalination and 'zombie' water projects. The shorter briefing notes deal with water issues arising from the Syrian conflict, provide a record of events and trends in water conflicts throughout the world, and an update on the Red Sea–Dead Sea project. Inevitably, in many of the articles, the authors draw on project experience in the USA but the text is written in a style that is both informative and makes for easy reading.

The article entitled 'Water footprint' tells us that, for example, including the water required to grow and process the coffee beans, 'an average of 140 (37 gallons) of water is consumptively used to produce a standard 125-milliliter (4·2-ounce) cup of coffee'. The article goes on to discuss the value and application of water footprint analysis. The water footprint issues discussed resonate with the briefing note, to be found later in the volume, on water conflicts, and reminded me of projects in which the arguments over the competition for water have been centred around obtaining foreign exchange for the nation, by growing internationally traded high-value estate-based crops, or providing water for local farmers to grow vegetables. The Pacific Institute's fascinating updated record of the chronology of world water conflicts (3000 BC to 2012) provides some excellent advisory lessons to those planning new projects.

In the article, 'Hydraulic fracturing and water resources – What we know and need to know', Heather Cooley and Kristina Donnelly concludes that 'the discourse around the issue is largely driven by opinion'. The authors discuss the water-related concerns arising from 'fracking'. Among the several concerns described, the conflict in water use arising from water withdrawal and the contamination of groundwater associated with well drilling and gas production are generally the dominant ones. The authors consider that, with the industry in its infancy and to avoid widespread problems in the future, continuing research and much closer monitoring of current operations is required, from which lessons can be learned and applied in future decision making.

The World's Water: The Biennial Report on Freshwater Resources has established itself not only as an important publication and reference, which presents data in a clear and attractive format for the water resources specialist, but also as one that has something for all water engineers and scientists to mull over and enjoy. Volume 8 is no exception. It cannot be all enjoyment, however, and it is chastening to read the figures for the lack of progress towards the Millennium Development Goals (2015) for sanitation in Sub-Saharan Africa and Southern Asia.

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