

BOOK REVIEWS

Water: Abundance, Scarcity, and Security in the Age of Humanity. Jeremy J. Schmidt. SAGE, New Delhi, 2018. 324 pages. Price: Rs 995.

Cape Town, South Africa may be the first waterless city, but that humans are drawing more than their geological share of water should make us shudder as things are becoming worse before getting any better. From surplus to scarcity, human interference with global water systems has turned it into an issue of security, requiring new ways of managing water in the age of the Anthropocene. With the idea of stable water thrown into a tailspin, there is an urgent need to define 'safe operating space' for humans to work within the planetary boundaries for sustaining life and life forms.

By altering the planetary systems humans themselves have attained the status of a geological force, influencing the philosophy of water management that connects culture, geography and economics to lose its relevance. Far from inducing equitable access to water across sectors, the global impact of the American approach to water management has triggered brazen water grab not only within the local hydrological limits, but beyond regional and national boundaries. Unless this predominant approach is questioned, argues the author of this book Jeremy Schmidt, addressing inequalities that exist on a geological scale is not possible.

There is no opportune time to question it than now as humanity's total share of natural material and energetic throughput accelerates at a phenomenal pace. While it is agreed that dividing humans from nature may not help in understanding its impact on natural processes, a failed attempt to reject the society/nature dualism in the past had engineered oppressive logic which enhanced the prospects of meeting certain ends rather than others. The book asks: how do contradictions over water, such as those over the right to water, gain civil status?

The trouble with single planetary story on water, triggered by a techno-centric philosophy of water management, is that while it does not deny that alternatives exist, it simply posits that we should do without them. Instead, Schmidt presents three philosophical concerns to counter it: first, water resources should be managed without privileging any particular cultural understanding; second, acknowl-

edge different social relations that take shape around different water-use practices, and third, appreciate the different symbolic ends that others may hold as intrinsically meaningful.

These three concerns – over subjects, social relations, and symbolic goods – could be critical entry points into initiating a new discourse on water management, as the paradigm of 'making things public' is inadequate since it fails to see that water problems are the outcome of a failed 19th century solution associated with the society/nature dualism. Although this argument may seem troublesome to emerging social entrepreneurship around water, the basic contention here is to ask what questions arise for modernity as the result of water management practices instead of thinking about water through a theory of modernity.

Relying on volumes of historical sources, the book attempts to bridge an understanding on engineering solutions to the social ideas that informed them. As we are now part of an 'unfolding water drama', there is a great deal required to depart from the previous ways into new ways of managing water in the Anthropocene. The challenge, however, for the global water governance is that it does not substantively depart from the philosophy that gave rise to the problems it seeks to solve. Schmidt does not offer a solution, but attempts to implicate ideas widely held in water management that have contributed to unequal water relations.

Making a strong case for reimagining water management, Schmidt refuses to think of water as only a resource because it lends credence to the surplus–scarcity–security trilogy which reinforces structures of thought leading to a single planetary story regarding risks to people, the planet and the economy. And such a story, far from generating empathy, offers further justifications for the existing approach to water management. Such an approach fosters unequal practices (of access, allocation, and pricing) that favour one cultural understanding of water over others.

Schmidt does not offer readymade solution, but questions the philosophy of water that had rejected older ideas as too metaphysical or too far down the evolutionary ladder of social development. However, the new philosophy was not without its own mythical elements. Did it not claim that the idea of liberal forms of

life was uniquely equipped to manage water within a vast array of social and economic demands? The end result of the new philosophy is that water which was once abundant is now scarce. If water continues to be managed the way it is, majority of our rivers will only be carrying treated wastewater, if at all.

The book offers refreshing new historical and philosophical insights to address water, which remains ever restless in this new geological era, and the choice to continue pursuing it as a resource may have limited resolution.

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Annual Review of Plant Biology, 2017. Sabeeha S. Merchant, Wilhelm Gruissem and Donald Ort (eds). Annual Reviews, 4139 El Camino Way, P.O. Box 10139, Palo Alto, California 94303-0139, USA. Vol. 68. x + 586 pages. Price: US\$ 114.

As always, it was enriching to read this volume of the *Annual Review of Plant Biology (ARPB)*. It has 586 pages covering 20 chapters, each one is an up-to-date review. Broadly these chapters can be categorized into six themes: signal perception and messengers, organelle biology, abiotic and biotic stress responses, cell biology and regulation, new tools and approaches in plant biology and tree biology, and biodiversity and evolution. I will briefly comment on each chapter by picking one theme at a time rather than their chronological order in the volume.

Under the theme of signal perception and messengers, there are five chapters. The review on ligand perception and membrane receptor kinases by Hohmann *et al.* focuses on the architecture of receptor kinases (RKs) containing lysine motifs and leucine-rich repeat (LRR) ectodomains. Each of these has an extracellular region and a cytoplasmic kinase domain. The extracellular region can bind to different ligands and accordingly transduce messages via cytoplasmic domain. These RKs are involved in hormone or peptide signalling for regulating different developmental and defence responses, specifically where the receptor is activated by binding to carbohydrate