

Book review

Managing Water in River Basins: hydrology, economics, and institutions

M Dinesh Kumar. Sage. 2010. 320pp.

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Managing water is one of the primary concerns in today's world. The issue is of particular significance to developing countries like India. Moreover, sustainable management of water, which is indispensable for the sustenance of life and livelihood, is crucial for economic growth and overall development. The growing concern about water can be seen in the amount of research being undertaken on various aspects of management and development of water. The present work by M Dinesh Kumar indicates the intensive research being undertaken and forms part of the growing amount of literature on water in India.

The idea of river basins as basic units in the management and development of water resources has been a persistent one for the past several decades. A formal concretization of this idea can be seen in the River Boards Act of 1956. Even though the idea has not been implemented so far for various reasons¹, it continues to be a key part of the discourses on water and is still in the policy agenda.²

The present work by M Dinesh Kumar has to be considered against this background of expanding discourse on management, development, and regulation of water. It presents a wide range of issues and challenges in water resource management in river basins. The analysis of various pitfalls in the

contemporary water planning and policy framework leads to suggestion of some strategies and approaches for sustainable management and utilization of water.

Among the detailed analytical survey provided in the book, broadly three major points need to be highlighted:

1. Challenging the prevailing idea of water harvesting

While acknowledging in principle the positive value of water harvesting in sustainable water management, the book presents a critique of the romanticized vision on water harvesting. It has been argued on the basis of empirical evidence that water harvesting measures could exacerbate inequity. Inequity becomes an issue mainly because water harvesting structures can bring about reduction in downstream flows, and thereby negatively affect access to water at the downstream level. It has been argued that 'equity is a goal, which is far from being achieved in the case of run-off harvesting. In the case of Ghelo basin, indiscriminate building of water harvesting structures led to drying up of reservoirs downstream, affecting the prior uses' [p. 69]. The study also makes the point that water harvesting is not a feasible option in hard-rock areas for both geological and economic reasons. Broadly, the book highlights the point that water harvesting cannot be considered a panacea for water scarcity in the country. It suggests that the geological nature and economic viability should be critical aspects to be considered while ascertaining equitable and sustainable management of water.

2. Pitfalls in water planning

Most importantly, the book talks about three pitfalls in the existing research and water planning. Firstly,

¹ One of the major identified reasons is that riparian states are wary of losing the control they have over rivers. [See, Iyer R R. 2003. *Water: Perspectives, Issues, Concerns* New Delhi: Sage.]

² See, for example, National Water Policy 2002, 4(2) and World Bank, India-Water Resource Management Sector Review-Initiating and Sustaining Water Sector Reforms (Report No. 18356-IN, 1998).

it highlights the crucial role of green water³ in water management. It has been identified that the existing water planning strategy focuses overwhelmingly on blue water at the expense of green water, which, in fact, is extremely significant and crucial. The example of the Narmada basin highlights the extent of green water use in agriculture. In this regard, it has been estimated that ‘...green water constitutes a significant chunk of not only the total water used but also the crop economy. Nearly 75 per cent of the total agricultural water use is in situ use of soil moisture’ [p.121]. On this basis, the study emphasizes that the relative contribution of green water (and other components of the hydrological system) is an important factor to be considered for efficient management of water, and also for equitable sharing of hydrological benefits and economic benefits of water infrastructure projects.

Secondly, the book highlights that changes in water-use patterns need to be considered as relevant while allocating water among different users and for different uses. This is of particular importance in the case of sharing of inter-state rivers because there are already a number of conflicts existing in India in this regard. The significance of changing water-use patterns should be a serious concern in deciding inter-state water disputes. However, it has been argued, by taking the Narmada Water Disputes Tribunal as an example, that quite often changing water-use patterns are neglected. Therefore, the sharing pattern as suggested by the Narmada Water Disputes Tribunal may become difficult to follow in future. This could also lead to further conflicts.

Thirdly, the study suggests that water management plans should consider surface water and groundwater together, and as innate components of the hydrological system. It has also been pointed out that management of water at river basin level should consider the impacts of groundwater on both present and future availability. Hence, it has been suggested that this mutually dependent link between surface water and groundwater need to be taken into account while working on any sort of water-sharing arrangements.

Opportunities for the future

Besides what has been suggested as part of highlighting a range of issues and challenges, the book brings to light three areas where changes are needed. Firstly, the study advocates a river basin approach towards sustainable water development. Secondly, a tradeable private property regime supported by a legal framework for proper implementation of property rights is strongly recommended. This has been suggested as a way to prevent misuse of water, and a means to promote conservation of the resource. Thirdly, pricing of water has been recommended as a solution to tackle overexploitation of water. Fourthly, the study seems to point at some economic benefits in water transfers from water-rich land scarce region (for example, eastern UP) to water-scarce land-rich areas (for instance, western Punjab).

It should be mentioned that the study lays down some crucial bottom-line principles and approaches in water management that are noteworthy. These mainly include the acknowledgement of plural dimensions of water resource, the emphasis on the need for a holistic approach, and the requirement for a legal framework for proper implementation of sustainable water management. However, readers might have strong reservations on the contents—at least in some critical areas such as water transfers and the advocacy of a private property rights regime. Arguments on these matters in the study can be challenged for the over emphasis on the economic aspects and lack of due consideration of social, cultural and ecological factors and the equity principle. Nevertheless, the study is worth mentioning for its thought-provoking critique of the existing water management strategies in the country, and would undoubtedly be helpful for water management students, water professionals, and policy-makers.

³ The term ‘green water’ indicates rainfall, in contrast to the term ‘blue water’, which indicates water in rivers, lakes, and aquifers. [p. 76].