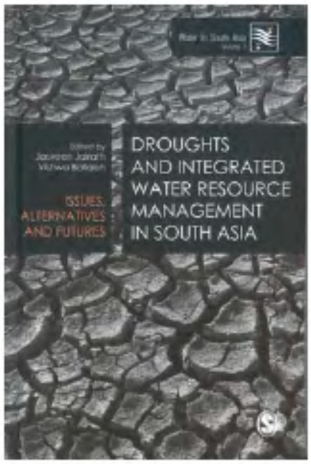

Droughts and Integrated Water Resource Management in South Asia: Issues, Alternatives and Futures. Jasveen Jairath and Vishwa Bakkabh (eds), Sage Publications India Pvt Ltd, B1/I-1 Mohan Cooperative Industrial Area, New Delhi 110 044. 356 pp. Price: Rs 695.

This is the second volume in the *Water in South Asia* series published by Sage, New Delhi in collaboration with saciWATERs, the South Asia Consortium for Interdisciplinary Water Resource Studies (www.saciwaters.org). The stated objective of the series is to contribute to education on water resource management with focus on concerns like ecological sustainability, equity and poverty, gender relations and democratic governance.

Drought and the related concept of scarcity are examined starting with different definitions of drought in differing contexts to evolving response of the governments of the region. Socio-political issues like the distribution of costs and benefits, and differential vulnerability of various sections of society within the perspective of environmental crises gripping the region have received special attention in this book. The book is subdivided in three parts, viz. backdrop, country overview and case studies with a total of twelve chapters.

The basic intent of the book, stated in the Preface, is to challenge the widely prevalent and perhaps simplistic conceptualization of droughts as resulting from scarcity of water that is naturally ordained and aggravated by population pressure. In this book, scarcity has often been interchangeably used with drought, leading to unnecessary confusion. Whereas drought is accompanied with scarcity of water, the other way is not necessarily true. There is no denying that like all environmental crises of the present era, drought is a complex socio-natural phenomenon and the human component is crucial both to understanding the misery associated with droughts and for designing the effective response to it. However, what is described as simplistic conceptualization is without doubt the starting point for understanding droughts in South Asia. Singh and Ballabh in their overview of the 'Incidence, impacts and management of drought in India' have correctly stated that transition from meteorological to hydrological drought when leading to agricultural drought may be termed as the onset phase of a generally perceived drought. This phase is characterized by low water storage in reservoirs, poor recharge of groundwater aquifers, and inadequate soil moisture to support crop growth. The progression from an agricultural to a socio-economic drought causes a famine situation when a community progressively loses its exchange entitlements to food and productivity assets. At this late stage, distress-induced environmental degradation forces the affected community to take recourse to cutting down the vegetative cover to cope with the acute food shortages. The situation also results in land degradation and sharp fall in livestock population, upsetting the energy cycle of the ecosystem. The shortages and deprivations of food, drinking water, and gainful employment often lead to a fall in self-esteem and desperation, and to social upheaval and/or crimes.

A dominant view expressed by various contributing authors is that the current focus on technical measures to augment water supply is not an adequate answer to recurrent droughts in this region. This is because asymmetric access to available water – based on unequal power relations – is reproduced at higher levels with augmented water quantum. Higher levels of water supplies create opportunities for those with social and political clout to siphon higher allocation and the majority continues to be deprived access to adequate water. Water deprivation of the majority is seen as a condition for sustaining the demand for 'more water', which is again subject to monopolistic controls and resulting exclusion. The drought-relief strategies are therefore seen as a self-perpetuation for 'more water' perspective as an answer to drought.

Sanjay Sharma eloquently traces the history of droughts in India, from the East India Company period to the Imperial era, and shows that the extreme misery associated with droughts of the past has been avoided through progressive evolution of governmental response leading to 'works of public utility' during drought and preparatory long-term response of harnessing water supplies in the drought-prone areas. The 1837–38 famine brought about a decisive shift in favour of giant canal irrigation works in the region. The famines of the 1870s strengthened the official view that India's climate and agriculture conditions demand protective works that may not necessarily be remunerative. Several initiatives followed: a Famine Commission was appointed, India Meteorological Office was established along with a new Department of Agriculture and a new Forest Act (1878) was enacted. The Famine Inquiry Commission in its final report (1945) stated that irrigation canals, multi-purpose reservoirs, tube wells, river pumping, open wells, tanks, private irrigation works in permanently settled areas and conservation of rain water by contour bunding must all be developed to utmost if agricultural production is to keep pace with the population growth in India.

The various case studies presented succinctly bring out the following:

1. Even though the South Asian region as a whole is endowed with more than global average rainfall, there is large spatial variability both in average long-term rainfall and the year-to-year rainfall with more than half of the region in the north, west and centre being prone to frequent droughts. Even parts of South Asia with abundant rain, such as Bangladesh and Sri Lanka, experience prolonged drought due to the inherent climate of the region, with considerable year-to-year rainfall variability.

2. Rapid growth of population in the region, post Indo-Pak independence, aided by better healthcare and increased life expectancy has increased pressure on available water resources. Development of water resources has failed to keep pace with increasing and competing demand for water in agriculture, industry and domestic sectors.

3. Whereas the emphasis of the governments of the region so far has been on the harnessing of available surface water through construction of large reservoirs and canal networks, farmers have found

groundwater more dependable and, with the availability of improved pumping technology, have developed this resource largely with their own financial resources. Efficiency of water use extracted from underground aquifers, therefore, has been significantly higher than that of surface-water utilization. 'More water' availability from both surface and groundwater sources has ensured all round development and has been an important input to making the region self-sufficient in food production. The alternate methods of water resource development also aim to conserve and generate 'more water' and use the same nearest to where water is conserved/generated. In a situation where millions lack access to safe drinking water and sanitation, the emphasis on 'more water' for development and drought-proofing can hardly be over-emphasized.

4. This focus on 'more water' really is not just a measure of drought protection, but also an important requirement of food security, economic development and health protection and general well-being of the populace.

5. But other important issues of general well-being – such as social justice and equity, deprivation of the poor and underprivileged, those of particular concern to women – though highlighted during periods of drought and scarcity are more related to overall socio-politico development and governance. These issues undoubtedly require special attention of the socio-politico establishments of the region for an all round growth leading to drought-proofing of the region in the real sense.

6. The gender issue is essentially an issue of empowering women through awareness, education, conferring of property rights and, in many ways, is also linked to the overall issue of empowerment of the poor. It is an unfortunate reality that in every socio-economic group the poorest and the most deprived lot comprises largely of women. As droughts and other forms of scarcity creep in, they also happen to be the first to face the resulting deprivation.

Several contributors have also focused on the political economy of droughts. Because official declaration of an area as 'drought affected' entitles the population certain relief measures through local officials, it is subject to lobbying to some extent. Some have even commented that there are vested interests in perpetuating droughts. There is no dearth of people who profit from the misfortune of others in any society anywhere in the world. But human civilization has not advanced because of such people; rather it has advanced in spite of such people. It is for all right thinking, social and political leaders to devise ways of governance that nurtures humanism and ensures that unjust profiteers are not only denied a field play, but also brought to justice.

Suhas Paranjape and K. J. Joy present an interesting alternate conceptual approach to drought and drought-proofing through better management of watershed resources, including biomass management with limited external input. Two other contributions, the first by Ganesh Pangare (Johad versus watershed: Case study of Tatun Bharat Sangh's approach) and the second by Srinivas Mudrakarta (Converting calamity into opportunity: Natural resource enhancement through participatory drought relief programme), are pointers to practical approaches at the grass-roots level and the positive role that NGOs can play in combating droughts. I would, however, like to restate with some modification the view of the Famine Inquiry Commission (1945) that irrigation canals, multi-purpose reservoirs, tube wells, river pumping, open wells, tanks, private irrigation works in permanently settled areas and conservation of rain water by contour bunding must all be developed to the utmost extent possible if agricultural production, including animal husbandry/industrial development/municipal water services are to keep pace with the growth in population and aspirations of a resurgent South Asia. While doing so, ecological and human dimensions and ethical considerations should not be lost sight of. Whenever there is a trade-off between resource development strategy and justice, equity, ecology and environment, informed and transparent participation of all stakeholders in the debate should be able to resolve the issues involved. An important practical contribution to drought-proofing of the region could also be through provision of non-agricultural income to the rural population. In most instances of drought in the region, it is the lack of purchasing power, and not necessarily the shortage of food and available water supply, that seems to be the cause of hunger and deprivation in the drought-affected areas. All this boils down to good and just governance, which is the primary role of all governments. Fortunately, some form of democracy does exist in all the countries comprising the South Asian region. We should make the best use of this by electing our representatives for government formation based on their track record alone, to the exclusion of all fissiparous issues.

This discourse on droughts would have been more complete if a chapter on 'virtual water' and its possible contribution to drought mitigation strategy in South Asia had been included in the book. The water embedded in the production of goods or services is referred to as 'virtual water'. For instance, it takes ~1300 m^3 of water on an average to produce one metric ton of wheat. The water is said to be virtual because once the wheat (or any other product or service) is grown, the real water used to grow it is no longer actually contained in the wheat or the product/service produced. The virtual-water concept has opened the door to more productive water use. But water is not the only facet of the decision-making process. The issues of comparative advantage of considering land, jobs, rural development, and access to markets are also vital. It is clear that looking at water in food trade is not enough, but at least it should be well understood.

Not having a single illustration in the book made the reading tedious. But repetitions, in almost every contribution, particularly about the various definitions of drought and the inadequacy of technical solutions in combating the drought did provide welcome relief through skipping of paragraphs. In spite of these shortcomings (?) of presentation, I feel that the book is an important contribution to current discourses on water scarcity and the associated human dimensions in South Asia, evolution of governmental response over the last almost 150 years, the continuing issues concerning equity, skewed access to developmental resources/plans and the lack of gender equality. In addition, some contributions also focus on the way forward, with sound conceptual and practical approaches.

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