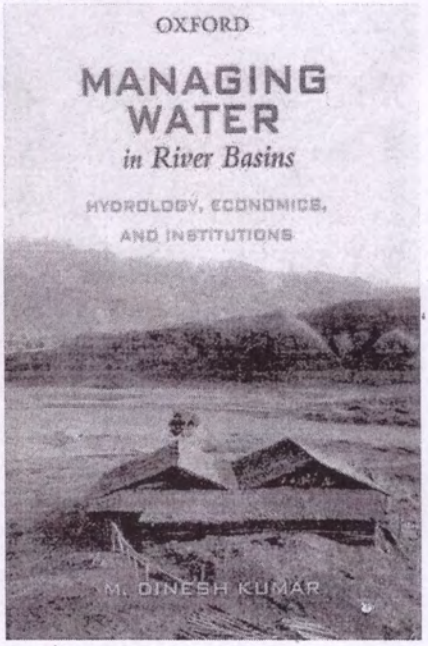
THE HINDU

Right pricing of water

D. Murali



With the growing scarcity of water, we need to invest in institutions for water allocation rather then work at interventions for augmenting its supplies, says M. Dinesh Kumar in 'Managing Water in River Basins: Hydrology, economics, and institutions' (www.oup.com). Citing studies, he adds that in situations such as what India faces, the opportunity cost of not investing in institutional reforms would be much higher than the transaction cost involved.

A section on 'pricing of water' opens by stating the general principle that the price of water for competitive use sectors such as irrigation and water-intensive industries means that pricing of water should be fixed in such a way as to discourage economically inefficient uses.

Wasteful practices

The author traces how, after Independence, the Indian governments saw irrigation as welfare means and therefore were reluctant to raise irrigation fee charged to poor farmers. "Also, the charges are paid on acreage basis and are not reflective of the volume of water used. It is believed that the lack of linkages between volumetric water use and water charges, and lack of agency capability to recover water charges and penalise free riders create incentive for overuse or wasteful practices."

Merely raising water tariff, however, without improving the quality and reliability of irrigation will not succeed, reminds Kumar. He adds that poor quality of irrigation increases farmers' resistance to pay for irrigation services they receive because returns from irrigated crops are more elastic to quality of irrigation than its price. "Therefore, the 'water diverted' by farmers in their fields does not reflect the actual demand for water in a true economic sense, so long as they do not pay for it. In other words, the impact of tariff changes on irrigation water demand can be analysed only when the water use is monitored and farmers are made to pay for the water on volumetric basis."

Quality of irrigation

Interestingly, if positive marginal prices are followed by improved quality, the actual demand for irrigation water might actually go up depending on the availability of land and alternative crops that give higher return per unit of land, one learns. This is because the tendency of the farmers would be to increase the volume of water used to maintain or raise the net income, as studies show.

When the farmer is confronted with marginal cost of using water, the water application regime should ideally correspond to a point where the net return per unit of land is highest, the author argues. Though this level of irrigation may not correspond to the point of maximum water productivity for that crop, he says it would result in higher water productivity in economic terms (Rs/cubic metre) as compared to a scenario of zero marginal cost of water. Also, increased efficiency may not lead to reduction in aggregate water use, as farmers might tend to increase the area under irrigation.

Power for agriculture

An allied area is power for agriculture, where researchers have come up with varied views, ranging from emphasis on 'rational pricing of electricity as a potential fiscal tool for sustainable groundwater use,' to caution that 'flat rate-based pricing structure of electricity in the farm sector creates incentive for farmers to over-extract water as the marginal cost of extraction is zero.'

The book cites Saleth (1997) for the caveat about the negative impacts of power tariff hike on the economic prospects of farming, unless farmers shift to high-valued crops. "The underlying argument is that the price levels at which power demand responds to tariff changes would be too high that the traditional irrigated crops would become economically unviable for the farmers."

Another study is by Shah et al. (2004) postulating that given the millions of wells and pumps scattered over vast rural areas, metering is an almost impossible task, and that the cost of metering electricity consumption in farm sector would be so high that, if transferred to the consumers, it would have negative impact on the social welfare produced from the use of energy in agriculture.

Diesel command