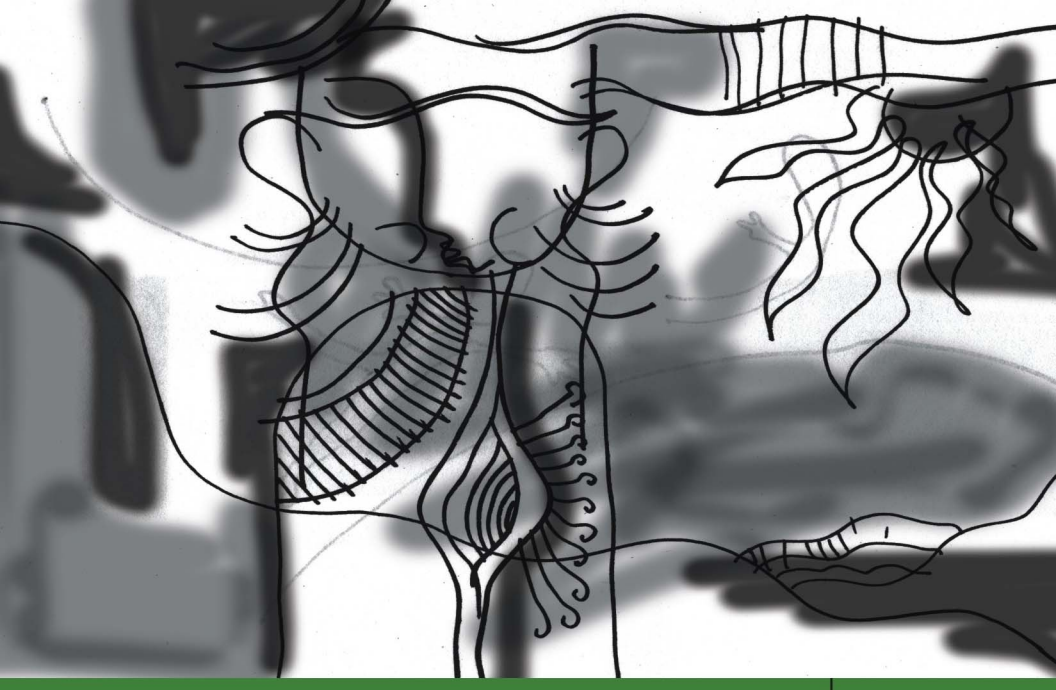

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development digest

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The Business of Hunger

Devinder Sharma

The much-publicised Millennium Development Goals aims to pull out half the world's population living in poverty and hunger by the year 2015. If only India had attempted to feed its 320 million hungry in 2002-03, at least a third of world's hunger could have been taken care of. Refraining from feeding its own people, successive governments took refuge by saying that the cost of feeding the poor would push up the fiscal deficit. On the other hand, between 2000-05, Rs 720,000 million have been invested in the telecom sector. There is no dearth of money when it comes to the sunrise industries. Much of this is however in the name of building a knowledge-led rural economy.

Technology Divide

Ten years back, while researching for my book "In the Famine Trap" (published by UK Food Group, London) I was travelling in the infamous Kalahandi region of western Orissa. It was during that time some hunger-related deaths were reported from Bolangir district. I drove to the village to meet the families of those who had succumbed to hunger. As I was approaching the dusty village what appalled me was the sight of two huge satellite towers

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The Business of Hunger, *Devinder Sharma,* ICT and Millennium

Development Goals, New Delhi, India
http://www.inmotionmagazine.com/global/ devsh_hunger.html [C.ELDOC 0511/The_Business_Hunger.htm]
installed right in the heart of the village. Believe it or not, each house in the village had a satellite telephone. The inhabitants of the village didn't have food to eat but were provided with telephones.

Satellite towers in a village where people had nothing to eat ! That surely is an ingenious way to bridge the technology divide so as to help the poverty-stricken join the mainline stream of upwardly mobile !!

In a country, which alone has one-third of the world's hungry, hunger and starvation no longer evokes compassion and reaction. News of hunger and starvation no longer adorns the front pages of newspapers. Hunger is, in reality, a non-issue. It is something that we must despise, something that we must close our eyes to. After all, the elite should not spoil their morning breakfast looking at pictures of the hungry splashed on the front pages of daily newspapers.

Farmers constitute the rural majority. Some pro-liberalisation economists led the assault on farming saying that it is not the poor farmers who needed adequate infrastructure, cheap credit, an assured market, and a remunerative price but the small percentage of rich industrialists, business and trade that needed to be showered with the State exchequer. The result is that while the non-performing assets of the nationalized banks in India grew to Rs 10,100,00 million -- you cannot call it bank fraud, as it has been performed by the rich -- with many individual industrialists defaulting the banks to the tune of Rs 5000 million, the recovery of outstanding dues from small and marginal farmers continued to be in the range of 85 per cent.

It is amusing that a majority of these erring business establishments have

already made a foray into the ICT sector. The technology divide or the digital divide surely becomes wider when scarce public resources are first misappropriated and then invested by the same industrial houses with the 'pious' intention of ameliorating poverty.

Take the case of agriculture. In Andhra Pradesh, Karnataka, eastern Uttar Pradesh, Bihar, Tamil Nadu, Maharashtra, Madhya Pradesh and even in the frontline agricultural state of Punjab, thousands of farmers had committed suicides. A majority of those who survived the ordeal preferred to migrate to the urban centres. Much of the agrarian crisis is because of the terms of trade being heavily loaded against the rural areas - more money is being taken out of the villages than what is being invested.

At the same time, in the past few months and for that matter a trend that continues from a couple of years, a few educated entrepreneurs in the Karnataka's Capital, Bangalore, have suddenly become the darling of the state exchequer. Many foreign companies most of them unable to operate in the hostile environment against genetically modified crops in Europe, have moved shop to Bangalore. The mice, they say cannot resist the cheese. Foreign investment therefore lures many of the educated young. And invariably, they all come with the promise of higher crop yields, nutritional crops, and with the underlying thrust on eradicating hunger. A majority of these biotechnology units, subsidised heavily from the state funds, merely act as a service centre for the foreign companies.

Those talking of hunger and poverty actually have never been ever close to feeling what hunger means. For the educated and the elite, hunger is nothing more than a missed lunch. Biotechnology therefore is a 'technological tool' for them that can help mitigate hunger and malnutrition. But the question that is often missed is: whose hunger and malnutrition they are talking about?

Digital Divide

At a time when jobless growth proliferates, the government has found an easy way out. Realising the importance of developing an information and knowledge-based rural economy "especially among the ultra poor and socially underprivileged sections of the society," it has embarked upon an ambitious programme to take information communication technology (ICT) to the villages.

Didn't we hear of the woman weaver in remote Tamil Nadu who was able to sell traditional handloom saris at a fabulous price? Haven't we read in the New York Times about the info-kiosks and 'e-Choupal' that Indian Tobacco Company has provided in rural countryside? Don't we know of the government's initiative to encourage farmers to go in for future trading in commodities? We are often told that these opportunities are merely a peep into the enormous potential ICT has in promoting the principles of social inclusion, gender equity and reaching remote areas and remedying regional imbalances.

The e-Choupal

The new order of empowerment is being hailed as a revolutionary paradigm transformation in the life of the Indian farmer. After all, the 'e-Choupal' project has already benefited over 2.4 million farmers with in six states. In the next ten years, its reach will extend to 100,000 villages and in the process create more than 10 million e-farmers. What will then happen? It will improve the farmers decision making ability, help aggregation of demand by creating a virtual producers cooperative and in the process facilitate access to higher quality farm inputs at lower costs for the farmers.

The emergence of 'e-Choupal' is also timed with the withdrawal of safety nets for the farmers. It is coming at a time when the retail sector is fast moving into the rural areas. The real objective of the 'e-Choupals' is to create a direct marketing channel for the promoting company, by what it calls as 'eliminating wasteful intermediation and multiple handling'. It actually aims at harmonising the business pursuits of the promoting company rather than helping the farming community

with pro-environment, pro-women and pro-farming systems that lead to sustainable livelihoods.

If the retail sector (read supermarkets) is an endeavour for achieving the broader objectives of social and economic development, farmers in the rich and developed countries would not have been driven out of the farm lands*. It is a fact that corporate agriculture in collaboration with the retail sector has plundered the natural resource base thereby rendering agriculture unproductive and environmentally-unfriendly. Promoting such a system in India is sure to compound the existing agrarian crisis and lead to some unforeseen socio-economic problems.*

The Commodities Exchange

Let us analyse the motive behind the commodity exchange. At a time when thousands of farmers have committed suicide in the past few years throughout the country, the government's intention of introducing future trading in rice, wheat and other commodities shows the complete bankruptcy in finding alternatives. In India, the average land holding size is 1.47 hectares, and only five to ten percent of the farming population has land holdings exceeding 4 hectares. To expect these farmers, who continue to survive against all odds year after year, to go online and trade seems to be a wild imagination of a stockbroker that has been accepted by apathetic official machinery.

It is known that the government is slowly withdrawing from food procurement citing the unwieldy procurement structure and the inefficiency in the system as the main reason. Food procurement however was an essential measure to provide an assured market to the farmers. By withdrawing

from food procurement, it is obvious that farmers are being penalised for the inefficiency of the food corporation and various other government agencies, which includes some of the original promoters of the NMCE.

At the same time, the government is also withdrawing from providing an assured price to farmers by saying time and again that the minimum support price (MSP) has become the maximum support price. This is a wrong conclusion, and does not hold true. The reality is that the MSP looks higher than the international prices because of the massive agricultural subsidies in the western countries that depress global prices. In the richest trading block - Organisation for Economic Cooperation (OECD) countries - a subsidy of US $ 1 billion is provided every day to agriculture as a result of which the international prices slump.

The question is why should the Indian farmers be penalised for the subsidised agriculture in the rich countries? Furthermore, by withdrawing the support prices, the Indian government is only helping the American and European farmers who continue to produce at subsidised prices and then dump the produce in the global markets. The cheap and subsidised commodities that are dumped on the world markets, actually is the key reason for growing rural poverty and loss of livelihoods.

Even in America, it is not the farmers who trade at the stock markets. It is the trade, which does that. If only future trading was a viable mechanism to ensure lock in prices of future production or sales, and provide efficient management of price risks through hedging, there was no need for the rich countries to shell out a monumental subsidy for agriculture. *If the American farmers, with the level of education and the size of landholdings, do not find future trading to be helpful, it is strange how the Indian government is promoting it as a saviour for the farming community.*

In reality, future trading is a recipe for sure destruction of the gains achieved after the advent of green revolution. This is a recipe for the elimination of small and marginal farmers, forming 80 per cent of the agricultural workforce, and is meant to pave the way for the smooth entry of the private sector. This is a recipe for further marginalisation of the farming communities. This is a recipe to ensure that India slips back into the dark days of the 'ship-to-mouth' existence.

A Vision for Rural Knowledge Revolution

Setting up a vision for a rural knowledge revolution is certainly not incorrect. *But what is needed is a mission that takes advantage of the existing knowledge and wisdom in the rural areas and incorporate strategies that actually help mitigate the existing problems.*
Change is not only desirable, but vital. But *the time-tested technologies of the past cannot be confined to a dead museum.* Take the case of the traditional water harvesting structures. These have been perfected with time, and have incorporated the wisdom of the people who lived in water scare situations. The need is to rebuild these structures, rather than to allow the water tankers mafia to ruin the remarkable traditional system.

History tells us that civilisations were nurtured along the rivers, the meandering rivers acting as a lifeline. At the same time the population in the cities drew its food requirements from the adjoining hinterland. The synergy between the cities or towns (call it urban) and the rural areas was therefore economically integrated. This has been gradually dismantled. Instead the entire effort is now to privatise the rivers and lakes, de-link it from the people who protected these water bodies. Similarly, the food supply of the mega cities and urban centres is now being passed into the hands of supermarkets. These highly subsidised retail malls are now moving into the villages.

Pushing the farmers and the rural populations into yet another alien 'knowledge' system is unlikely to meet Mahatma Gandhi's dream of a gram swaraj. Mahatma Gandhi realised the strength of the villages and wanted these to be self-reliant. *The tragedy is that those who design such massive networks in the name of poor and hungry have actually lost touch with the ground realities. The problems exists somewhere else and we come out with solutions that actually help the corporates garner more profits.*

The ICT industry can meet its own obligations from its own resources. The technology is certainly very useful and this writer is not opposed to technology interventions but what has to be immediately checked is the faulty emphasis in promoting the commercial interests of the hardware manufacturers in the name of creating rural livelihoods.

It is time to redefine the national priorities. It is time we first understood the limitations of our own 'knowledge' in grasping the real problems and obstacles in rural development.

Where is the technology intervention that can help create a livelihood or empower under-privileged people?

Poverty cannot be removed by providing the poor with mobile phones and knowledge-kiosks whereas hunger cannot be fought by setting up a nationwide network of 'e-Choupals'.

If we are honest in fighting hunger and squalor, let us begin by making an effort where it is needed.

Water! Water!! Everywhere!!! But for Everyone?

Most regions in India had a surfeit of water this year. Though late in many areas, it was very welcome. But not so welcome for those in Mumbai, Chennai, Ahmedabad - and not so welcome for the farmers whose crops were inundated or washed away.

This is our problem with water - when it rains it pours, and leaves inundation and floods in its wake. Otherwise, we have drought, - parched throats and dusty lands. An unending cycle of plenty and scarcity.

Add to this - effluents from industry and urban drains, salination of aquifers, receding water tables, … the predicament just gets more complicated and chaotic.

Bhakra dam - A different view, *Siddharth Narrain*, Frontline, Volume 22 - Issue 12, June 04-17,2005. http://www.flonnet.com/fl2212/stories/20050617000507700.htm [C.ELDOC. 0511/Bhakra_dam_A_Different_View.html]

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Moving Nimbly Beyond, *Sunitha Narain,* Down to Earth, April 15, 2005. http://www.downtoearth.org.in/editor.asp?foldername=20050415&filename=Editor&sec-id=2&sid=1 [C.ELDOC1.0512/Moving-nimbly-beyond-sunitanarain.html]

The response of our policy makers? More of the same, but on a larger scale - the stuff of contractors' dreams, everyone else's nightmares.

Shripad Dharmadhikary *exposes the holy cow - one of the first of India's Temples of Modernity, the Bhakra Nangal Dam, and shows us the flawed premises and the even more flawed conclusions that we still hold about mega-projects. It is a partisan perspective, but an inescapable one, if you believe that people, no matter how poor or powerless, are at the heart of the development discourse.*

Ramaswamy R Iyer *takes a more considered, and 'objective' approach to similar conclusions.* **A Vaidyanathan,** *The reviewer of his book, explains the broad canvas that Iyer provides for his reader on these issues. We need to delve into these aspects if we have to understand the issues related to water, and even more important, if we wish to act - as we should, - as concerned, active citizens, or as agents involved at the grassroots or at the policy level.*

The box by the **WWF** *refutes a crucial construct in our mindset - that growth implies degradation in the short-term, that it necessarily exacts sacrifice from the poor in the short-term. Not true, says this report.*

*In this globalised world, are there lessons to be learnt from elsewhere? Another ' third' world country, Mexico, has been going down the path of adjustment, structural adjustment. We can learn from its experience, say***s Tushaar Shah, Christopher**

Scott, Stephanie Buechler - *and there are also situations that we need to be wary of.*

Sunita Narain *calls for a recognition thatwater reforms need to include the informal rural water economy within its ambit, and that it be given its due place. Reforms and effective policies do not necessarily entail merely pricing water as a commodity. It needs to focus on freedom to choose and reinvent our own way of working with water, based on need, and a mix of the new with the old***.**

Bhakra dam - A different view

Siddharth Narrain

Unravelling Bhakra: Assessing the Temple of Resurgent India
by Shripad Dharmadhikary, Manthan Adhyayan Kendra*, Badwani, MP, 2005; pp 372, Rs.150.*
[B.E21a.D3]

THE last two decades have seen an increasing number of questions being raised on the utility of big dams in India. In 2000, the World Commission on Dams (WCD) brought out its report "Dams and Development: A New Framework for Decision Making" after two years of work, which included interactions with non-governmental organisations (NGOs), people's movements, governments, and international organisations such as the World Bank. According to the India country study report submitted as part of this process, the planning process in India has not looked seriously at alternatives to big dams nor has it tried to find out whether big dams have been beneficial *vis-a-vis* their financial, social and environmental costs. One of the dams that is widely perceived to have played a crucial role in India becoming self-sufficient in food production is the Bhakra dam, the first of the large dams that Jawaharlal Nehru called "temples of modern India".

A recent report, "Unravelling Bhakra: Assessing the Temple of Resurgent India", has concluded that the spectacular growth in foodgrain production in Punjab and Haryana can be attributed to the Bhakra project only to a limited extent. The report, the first of its kind to evaluate comprehensively the costs and benefits of the Bhakra project, was put together after three years of research and field visits by the Manthan Adhyayan Kendra headed by Shripad Dharmadhikary.

Explaining why Manthan chose to study the effects of the Bhakra dam, Shripad Dharmadhikary said: "Whenever we question large dams, the issue of Bhakra's contribution to food production in Punjab and Haryana is always brought up. Bhakra has become a symbol of the development planning debate in India and so we thought it was important to study its benefits."

Bhakra – initiating intensive, centralized systems

According to the report, the Bhakra project was originally conceived to improve undivided, pre-Partition Punjab's bargaining power over Sind with respect to the sharing of the waters of the Sutlej and the Beas. ***The report links the Bhakra project to the Second Five-Year Plan (1956-61), which marked a shift away from a decentralised approach to one that concentrated on large-scale projects.*** The focus was to increase agricultural production and to do this the planners concentrated on intensive methods by which higher surpluses could be procured for the

market. The report argues that the other option available to planners at that point was decentralised rainwater harvesting and water-shed management, soil conservation and groundwater recharge programmes.

The report questions a number of popular beliefs on the contribution of the Bhakra dam to agricultural production in Punjab and Haryana and the increased production of foodgrains in India. It emphasises that by 1953-54, when irrigation from the Bhakra began, the irrigated area of Punjab and Haryana was already 7.47 million acres, three times the irrigated area added by the Bhakra project. By this time Punjab was already contributing 20 per cent of the total wheat produced in the country.

According to the report, the only substantial increase in cultivable area attributable to the Bhakra project was in Hissar in Haryana. The Bhakra command area covers around a third of the cultivable area in Haryana, a fifth in Punjab, and a negligible fraction in Rajasthan. The rest of the canal irrigation in these States is from projects that are over a century old and include the Western Yamuna Canal, the Upper Bari Doab system, and the Sirhind canals.

Bhakra - The myth of groundwater recharge

One of the justifications for large dams has been their contribution to the recharging of groundwater in the area. The report points out that agricultural production in Punjab and Haryana increased because of the exponential increase in the mining of groundwater, which had accumulated over centuries, mostly through tube wells. According to the report, 43-49 per cent of all agricultural production in Punjab and 35 per cent in Haryana are based on unsustainable mined groundwater. Based on figures available for 1989-90, the report concludes that of the total water used for crops in Punjab, 31 per cent is from unsustainable mining of groundwater and 13 per cent from

rainfall. Canals meet around 48 per cent of consumptive use. The contribution of the Bhakra dam is only around 15.62 per cent in Punjab and a similar calculation reveals it to be 12 per cent in Haryana.

The report points out that land in the dry districts of the Hissar belt of Haryana, the major beneficiary of the Bhakra project, is now burdened with the problems of waterlogging and salinity. In many parts of Hissar, large patches of land are encrusted with salt. In these areas, either the land is vacant or crops grow in patches. Waterlogging has caused extensive damage to roads, infrastructure and even houses.

Displacement

The Bhakra dam led to the displacement of around 36,000 people and submerged Bilaspur, a town with a population of 4,000 people. The report points out that more than 50 years later, many of the oustees have not been settled fully.

K.L. Rao, the Irrigation Minister at the Centre when the dam was built, narrates in his memoirs an incident during one of his visits to the dam site. A resident of Bhakra village pointed out to him that though the dam site was heavily lit at night, his village did not receive any electricity. Rao ordered that the village be supplied electricity free, though the Bhakra Beas Management declared that this would be an unfair burden on the project. The village finally received electricity in 1970, but they had to pay for it.

According to the report, project oustees who were living at a height of up to 1,280 feet (390 metres) were not given the choice of opting for land-based resettlement. Those who were given land had to go to Hissar district, over 200 kilometres away. To date there remain 2,456 oustees who do not have proprietary rights over the land allotted to them. All this despite the oustees cooperating fully with the government when the dam was built.
The report says that the environmental impact of the dam will include the loss of forests, wildlife, and fish and an increase in the incidence of diseases among those living near the dam because of the excessive use of chemical fertilizer and pesticide in the command area. But evaluating the exact impact on the ecological health of Punjab and Haryana has been difficult because of the lack of enough data before the dam was built and the lack of proper monitoring of the area after it was constructed.

The report suggests that an alternative to large projects like Bhakra would involve measures to conserve soil water, harvest rainwater and limit the use of groundwater to the extent that it is recharged, besides switching to organic farming with minimum chemical inputs and encouraging a diversity of crops.

But the Bhakra dam has its share of supporters.

R. Rangachari, a former member of the Central Water Commission, who has done a study on the Bhakra dam for the Centre for Policy Research,
which is as yet unpublished, said: "We cannot say that no good has come
has made electricit out of any big dam. The Bhakra dam has contributed to irrigation in Rajasthan. It has generated 7,000 million units of electricity every day. It has made electricity available at affordable rates. It costs less than 10 paise to generate one unit of electricity in the Bhakra dam.

We have to look at whether the project has done what it claims and if it has been in the nation's interest. We must remember that irrigation generates groundwater."

Mega dams

Another unpublished study prepared for the World Bank by Ramesh Bhatia and R.P.S. Malik on the Bhakra dam says that the dam has contributed significantly to the increase in irrigated area and the output of agricultural commodities and electricity over the past 45 years. According to the draft World Bank report, the total foodgrain production in the Bhakra command area during 1996-97 was 27 million tonnes, an additional output of

24.6 million tonnes compared with the food output in the early 1960s. The draft report says the hydropower stations installed in the Bhakra system have the capacity to generate 2,880 megawatts of electricity and they currently generate about 14,000 million units of electricity in a year. According to the draft report, these increases have generated growth downstream in agro-processing and many other sectors of the regional economy.

Conclusion

Whatever disagreements one may have with the findings of the report, it remains an important contribution to the debate around the utility of big dams. Ramaswamy R. Iyer, former Secretary, Ministry of Water Resources, said: "It is a very important study. If the findings of the study are true then the consequences are major. ***The study comes to a completely different conclusion from the popular perception of the Bhakra dam.*** Even if the study is 50 per cent right, it would result in a major change in our perception of the Bhakra dam."

Managing Water

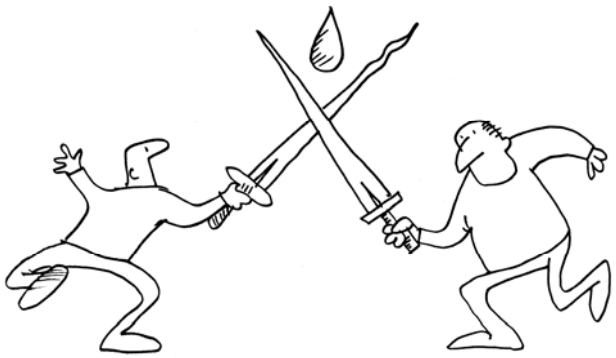
A Vaidyanathan

WATER: Perspectives, Issues, Concerns
by Ramaswamy R Iyer; Sage, New Delhi, 2003*; pp 369, Rs 550.*
[B.E26.I2]

The widespread interest in water related issues among 'experts', policy-makers and the citizenry is a welcome trend. Rational and informed public discussion of the issues involved is essential to help arrive at a reasonable compromise between the compulsions of proper (i e, efficient and sustainable) management of the resource and an equitable balancing of competing interests.This however calls for (a) an appreciation of the technical problems involved in developing and managing water resources in an efficient and equitable manner; (b) awareness of the legal and institutional framework in which these tasks are supposed to be addressed; and (c) an understanding of the limitations of this framework and the problems experienced in implementing them. These desiderata are not met in the current public discourse on water partly because of the inherent complexity of the issues but largely because of the dearth of adequate and reliable information on these aspects in the public domain. Ramaswamy Iyer's collection of essays is significant contribution to filling these lacunae.

Iyer is eminently qualified for this task: He has a wealth of first hand knowledge and experience of government policy-making and implementation as secretary to the ministry of water resources. He has since become increasingly disenchanted with the current strategy and Besides being informative, the essays are remarkable for explaining key issues in a language that is comprehensible to the non-professional lay audience.

The essays, divided into six sections, cover the following broad themes: The constitutional and legal framework defining the role and powers of government and the nature and content of 'rights' over water (chapters 1 and 7 to 10); issues relating to planning and management of water resource projects (chapters 4 to 6 and 13); mechanisms and procedures of dispute settlement and the manner in which they have worked (or rather failed to work) in selected specific cases (chapters 2, 3, 19 and 20); critique of large dams (chapters 11, 12, 14, 15 and 16); and reflections on future directions (chapters 21-26)



Legal Framework

The legal framework consists of (a) provisions regarding the powers of the state in relation to water resource development and their distribution between tiers of government; (b) the nature of and basis for the rights of different claimants over common sources of water; (c) the principles, mechanisms and procedures for resolving disputes.

The constitutional provisions are fairly well known: 'Water' is listed as a state subject. The centre is however empowered to (a) take measures to ensure integrated development of interstate rivers, (b) adjudicate disputes between riparian states; and (c) intervene in the interests of environment protection. Iyer refers to the various enactments of the centre under these provisions: These include the River Boards Act, the Interstate Water Disputes Act, and parliamentary legislations relating to environmental protection, forest conservation, wildlife protection and pollution control. The centre also intervenes on the basis of its powers in respect of national economic and social planning, hydropower development and international rivers. These, together with the fact that a substantial part of states' development plans are funded by central assistance, have given considerable scope for the centre to review priorities and projects for water resource development in the states. However, as Iyer points out, the centre has been hesitant to use its powers.

The principles for determining the relative claims of different segments of a river basin are not specified in any central (or state) legislation. Internationally the notion (called the Hormon principle) that people and communities can claim use rights on the basis of sovereignty or prior appropriation has given place to the idea that allocation of a basin's water resources should be guided by the principle (called the Helsinki rules) of 'equitable apportionment for beneficial use' for the common benefit of all its people. Though India has formally accepted the latter, it is not incorporated in any central or state law. On the other hand many

of the tribunal awards on sharing of interstate rivers tend to adopt a combination of the two principles.

On the other hand state governments have their own laws and regulations concerning the rights of individuals and communities to exploit water resources. The impoundment or diversion of stream flows can be done only by the government or with its explicit permission. This is premised on the state's assumption of the right of eminent domain or absolute ownership rights over water resources. Iyer refers to this but does not discuss in any detail the basis or justification for these presumptions. One would have thought that the role of the state is that of a trustee of water resources and that its power to regulate their use must be related to and contingent upon promoting common good.

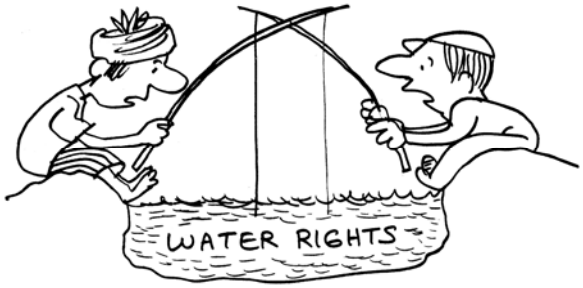
Water conflicts

Other important lacunae referred to by Iyer include the absence of any legal recognition of the community as an entity for water resource management; the status of customary rules and practices as against statutory law legislated by the government; and the fuzziness of water rights. Thus the 73rd and 74th constitutional amendments list local water development and management among the functions of panchayats and nagarpalikas. But there is no legislation clarifying the relative roles of the local bodies and the state governments.

The nature and content of 'rights' and entitlements of various claimants remains very fuzzy. Individuals, communities and water users associations are accorded only use rights. These rights are linked to ownership/possession of land and in the case of groundwater allow practically unlimited exploitation. Entitlements for surface water are subject to certain specified restrictions, either in recognition of tradition and custom or on the basis of their inclusion in the command of an irrigation system. But the right holders cannot hold the state accountable for failing to meet their entitlements partly because the content of these rights are

seldom spelt out clearly. In fact the courts have upheld the right of the state to alter entitlements conferred on users, as it likes. Iyer rightly draws pointed attention to the fact that law and practice recognises only users' entitlements to water but is silent on the claims and concerns of other stakeholders (especially those adversely affected by water resource development); and on the concept of water rights as fundamental right as derived from a fundamental right to life hardly helps to clarify the nature and content of rights.

His



suggestions for reform – moving away from bureaucratic regulation, dissociation of water rights from land rights, decentralised community control and regulation of water and encouragement of water markets – reflect a deep concern for equitable distribution. While there is a strong case for the first three both on grounds of equity and efficiency, the scope for decentralisation is more limited than its protagonists recognise. The feasibility of water markets based on tradable rights is not only doubtful but its desirability in terms of ensuring equitable distribution and sustainable use of water is open to serious question. This reviewer is sceptical of even the rather hesitant endorsement of the idea of privatisation by Iyer.

DEVELOPMENT

Dispute Settlement

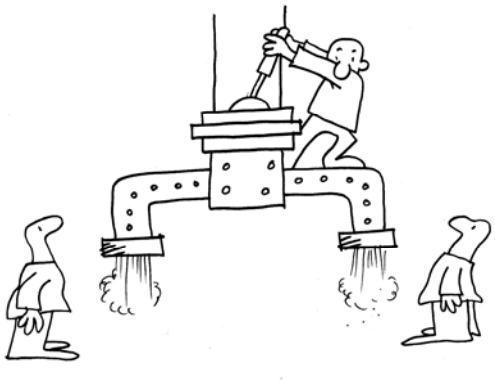
Conflicts and disputes over water are pervasive. They occur between uses and users drawing supplies from a common

source – within the command of individual tank, barrage or large reservoir, as well as between the command areas of different interrelated systems in a river basin or sub basin. There are also disputes over sharing of waters of a river basin between its different segments. The impression is widespread that the mechanisms and processes of dispute settlement are far too weak and ineffective. But there are few careful and properly documented studies of these aspects. Iyer provides an excellent review of the law and the institutional mechanisms for dealing with interstate and international disputes and their varying effectiveness in dealing with specific disputes.

The Interstate Water Disputes Act passed by Parliament in 1956 spells out the modalities of adjudication of such disputes under the auspices of the central government. Iyer notes that initially it was relatively effective: the awards of the Krishna, Godavari and Narmada tribunals, appointed under the act, for sharing their waters was accepted by their respective riparian states as binding. Over time, however, a whole lot of difficulties have cropped up. Inordinate delays in the process of adjudication, and seeking clarifications on the awards and their notification, disputes over implementation and an increasing tendency on the part of disputants to contest tribunal awards and show their reluctance to accept and implement the awards – have weakened this mechanism. The centre has been increasingly reluctant to invoke the authority under this act.

Iyer argues that while negotiated settlements are an option, it is not necessarily better or more effective than adjudication: both face problems arising from lack of guidelines, technical complexity and sanctions to ensure implementation. In any case, as he rightly points out, nothing prevents negotiation in parallel with adjudication. He is of the view that some changes in the law – such as setting clear time limits for tribunals to come a decision; allowing appeal to Supreme Court; and

stronger sanctions (such as granting contempt power to the tribunals) against non implementation of their award might give greater flexibility and stronger incentives for compliance. Creating space and encouraging non-juridical avenues (arbitration, mediation and negotiation) are desirable and should be given greater attention. However, the problem is bigger and deeper than one of procedures. None of them will be effective unless there is a general agreement on the principles of 'fair' water sharing and a willingness to abide by the results of an award or an agreement
based on those principles arrived at after due process.



These difficulties have also stalled moves towards integrated basin resource development to serve the common good of all the claimants of these resources. Iyer points out that the idea of basin planning is widely accepted as desirable. In India the Damodar Valley Corporation was an early attempt to implement this concept, but failed. The River Boards Act of 1956 was rather anemic in that it sought to establish only advisory boards without any authority on planning or management. No boards have been set up under the act. Ad hoc authorities created in a few basins outside of this act have proved to be ineffective. Even as the issue has

resurfaced in the context of, among others, discussions on the National Water Policy and the Irrigation Commissions (of 1972, and 1998), strong resistance from states apprehensive of their erosion of their 'sovereignty' and powers have impeded any significant movement to implement the idea.

Water Resource Planning

These and other aspects of water resource policy and implementation are discussed at some length. Though a state subject, the centre has played a significant role, well beyond its powers under the Constitution, to shape programmes and policies in this sector. The size and composition of allocations for irrigation and water supply projects for all states are subject to review and approval by the national Planning Commission. Inclusion of all major and medium surface irrigation projects in the plan is subject to approval by the Technical Advisory Committee of the central government.

More recently, central clearance under national environmental and forest protection laws. Major new initiatives, like Command Area development and National Water Management, were taken up at the instance of the centre. State irrigation finances were subject to review by the national Finance Commission.

The National Water Policy of 1988, again a product of central initiative, was an attempt to forge a consensus, based on widespread consultations between the central and the state governments, NGOs and non-official experts, about the need to take a broad view of water

Water conflicts

development policy covering all sources and uses of water, the rights of those displaced by projects, adoption of an integrated multi-disciplinary approach to planning, sustainability and equity cost recovery.

The evolution of water policy at a formal level clearly reflects an attempt to address the changing nature of concerns over priorities and strategies of water resource development. However, as Iyer points out, it has not had a significant impact on the way projects are planned, screened, implemented and managed. His discussion of these aspects, though not detailed or comprehensive, highlights the fact **that despite central scrutiny and review projects continue to be poorly designed, marked by huge cost and time over runs, and their potential underutilised. It has not prevented states from taking up projects without approval of the Planning Commission or following financially ruinous policies in respect of water pricing. Projects are poorly maintained; water is used wastefully, inefficiently without serious concern for sustainability or the environment.** One would have like to see a fuller discussion of these issues.

Large Dams

That Iyer's perspectives on water resource development and his ideas on appropriate future strategy have undergone a marked change is evident in

the section on large dams (Section IV) and on 'Looking at the Future" (Section VI). This change, already incipient from his experience in office, grew stronger during his intensive involvement in the Narmada controversy and the work of the World Commission on Dams.

The Narmada Bachao Andolan's mass mobilisation against the Sardar Sarovar project focused public attention on the serious deficiencies in the way huge and complex projects calling for massive expenditures of public resources are planned, approved and implemented. Adequate information on the project scope, design and costs has not been made available to the public; costs are underestimated and benefits exaggerated; the magnitude of displacement, submergence of forests and agricultural land and other adverse effects are grossly underestimated; affected people are not informed much less given an opportunity to articulate their concerns and given assurance that adverse impacts affecting their livelihood and habitats will be minimised and unavoidable losses be assessed fairly and compensated fully.

Iyer's account of the course of the Sardar Sarovar case leading unto the
Supreme Court judgment is exemplary for its informative value, highlighting the issues involved, the manner in which the court handled them and the eventual judgment it delivered in the case. It is one of the best, and most balanced, account that this reviewer has come across and deserves to be commended as much for the clarity of his presentation as for his courage in writing it.

As member of the task force set up by the World Commission on Dams to assess India's experience with large dams further reinforced his scepticism about the contribution of large dams to increasing agricultural production and concern about the tendency

to underrate, and even ignore, their adverse consequences by way of displacement and dislocation of people environmental degradation and ensuring sustainable water use.

While strongly committed to the need for an integrated approach to planning and management of water as visualised in the National Water Policy, he comes out strongly in favour of a drastic reorientation of strategy away from large reservoirs and canal systems to promoting small, decentralised, community-based rainwater harvesting and watershed development. He argues this position forcefully but in my view, far from convincingly.

Development Priorities

Increasing the quantum, seasonal duration and assurance of water supply for agriculture is crucial to sustained growth of food and fibre production to support a rapid overall growth in the economy. Since independence the volume of water utilised from all sources is estimated to have increased from 220 bcm to over 500 bcm.

It is true that traditional water harvesting works have been neglected and inadequate attention given to improving and extending them. There can be little disagreement about the desirability of giving more, much more, attention and resources to community-based watershed development to make fuller, more effective use of local rainfall. However, even if rainwater harvesting and integrated watershed development had been done efficiently and on a massive scale, it is unlikely that they could increase water availability from surface sources on the scale realised so far and likely to be required in the future. Large storages therefore have an essential and important role to play.

Water conflicts

This does not however mean that the programme for construction of more large projects should continue on the scale visualised in plans. It certainly argues strongly against mega projects like inter-linking of rivers: Not only are they technically and economically dubious, but are being pursued

without any proper scrutiny or public discussion. They are

a red herring that seriously detract attention from the more important and massive task of putting existing facilities and half complete projects to better use. (Iyer comes out clearly against the interlinking project on these grounds.) On the other hand, there is in fact a case for reviewing commitments on projects under construction especially those which will take a large amount of resources to complete. The emphasis should be much more on improving the efficiency of water use in existing projects (but reducing waste) and getting more output per unit of water (through better management) for both of which there is a large scope, much larger than is realised by planners.

Integrated basin planning and management of water and participatory management are mentioned without much discussion of the recent reform initiatives and their impact. Policies to promote prudent and efficient use of available water, the problems of arising from water pollution and measures to control it hardly figure in the essays. Iyer seems to consider privatisation and water markets as promising ways to improve water use efficiency. The arguments opposed to privatisation – on grounds of that it is not feasible, that it will lead to inequitable distribution and that it will pay scant regard to issues of sustainability and water quality – are not discussed. The collection would be richer and give a more rounded picture of this complex subject if these issues had also been dealt with more extensively.

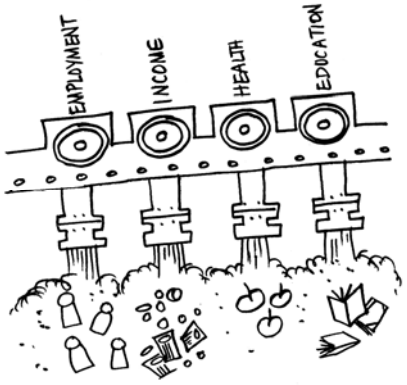
Even so, Iyer's essays provide a wealth of material on various aspects of water resource development, the problems involved and the manner in which they are being addressed and the important issues that need to be addressed to ensure equitable and sustainable use of this vital and valuable resource.

DEVELOPMENT

Save water, serve people: WWF report

The strong link between environmental improvement and economic development can no longer be ignored, as four freshwater conservation projects by the World Wide Fund for Nature demonstrate Better management of scarce freshwater resources has a direct, positive impact on the employment, income, health and education levels of local people, says a new report by the World Wide Fund for Nature (WWF).

'Freshwater and poverty reduction: Serving people, saving nature' analyses projects in Brazil, Colombia, China and South Africa, demonstrating dramatic improvements in the livelihoods of poor local communities where WWF-supported conservation projects are in place.



The Varzea project, located in Brazil's Amazonian floodplain, saw a 60% increase in commercially valuable fish production over the last decade, achieved through better management of the region's lakes.

In China, previously reclaimed lakes like Lake Dongting have been restored to the Yangtze river, resulting in diverse agriculture and doubling farmers' incomes. Furthermore, women actively participated in the livelihoods schemes, and more than 25% of the beneficiaries of

the project were between 50 and 60 years old; one-fifth was over 60 years old.

"We need more projects like these that not only conserve freshwater systems but also improve people's standard of living," says Jamie Pittock, director of WWF's Global Freshwater Programme. "Freshwater conservation is an essential part of poverty reduction, not a conflicting activity."

DEVELOPMENT

Sustainable management of freshwater habitats provides essential services to the poor, such as clean drinking water and more effective agriculture and fisheries. Freshwater conservation projects must be a priority for any government pursuing the Millennium Development Goals (MDGs), which aim to reduce poverty and ensure environmental sustainability.

In South Africa, more than 1,400 previously unemployed people (more than half of them women) now have higher incomes as a result of WWF's Working for Wetlands Project. The project has benefited both people and nature so that workers can afford better diets and improved housing. At the same time, 40 wetland areas have been conserved in a country where half the original wetlands have already been destroyed.

Elsewhere, Colombia's Lake La Cocha Project saw the livelihoods of local people improved as a direct result of better management of water resources, with increased crop production. Household incomes here are now 2.8 times the national average. "We don't have to go to the doctor as often as before and our families can feel the difference," says Concepcion Matabanchoy from the Lake La Cocha region. "Malnutrition is down and we are healthier."

Conserving freshwater ecosystems is not some lofty goal preached by the environmental movement but a practical and vital building block for eradicating poverty, says the WWF, adding that the four aforementioned projects are ample testimony that conservation and poverty reduction go hand in hand.

Save water, serve people: WWF report, www.panda.org, Sept. 13, 2005.
http://www.panda.org/about_wwf/what_we_do/freshwater/news/news.cfm?uNewsID=23031
[C.ELDOC. 0511/Freshwater]

Water Sector Reforms in Mexico : Lessons for India's New Water Policy

Tushaar Shah, Christopher Scott, Stephanie Buechler

India's Water Policy, 1987 and 2002

The new water policy adopted by the government of India in 2002 [GoI 2002] has received a mixed response. The NGO community has been critical about several aspects: they would like water rights to be vested in communities instead of some abstract notion of the Indian 'state'; they would also like the emphasis to shift from mega projects to small-scale systems, from management of 'blue water' to rain-water harvesting and soil-moisture management, and from government control to community control. However, this discussion has overlooked the principal limitation of the Indian Water Policy, old as well as new – the absence of an operational agenda. Like the 1987 Water Policy,

Water Sector Reforms in Mexico : Lessons for India's New Water Policy

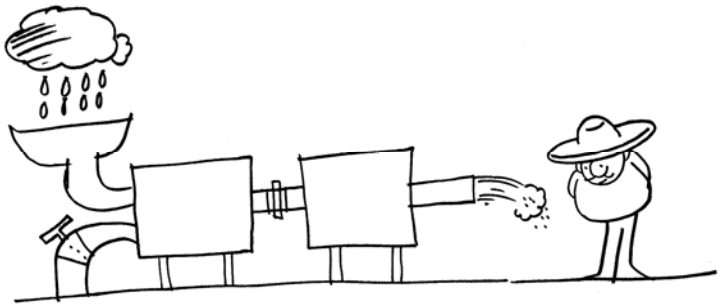
which changed nothing in the way we managed our water resources, the

2002 Water Policy too may turn out to be a 'paper policy'

Institutional Reforms in Mexico's Water Sector

Mexico's irrigation reforms are a product of its agrarian history and the larger programme of restructuring the economy that began during the early1980s. Indian policy discussions often emphasise the importance of decentralised policy-making, however, in the aftermath of the Revolution, Mexico was more centralised than India has ever been. A hallmark of Mexico's aggressive water sector reforms has been the domination of the central government in sectoral policy-making and implementation, which has progressively diminished the operating space available to state and local governments.

The Law of the Nation's Waters of 1992 combined with an amendment to Article 27 of the Constitution in the same year became a watershed in Mexican agrarian as well as water reforms. Up until 1989, all irrigation was managed by the Ministry of Agriculture and Hydraulic Resources, and like in India, government policy towards agriculture and irrigation was guided

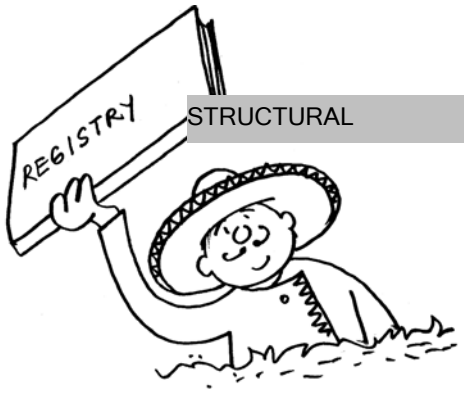


by the socialist thinking of a welfare state.

Like India and China, Mexico too suffers from chronic imbalance of population and water availability in different regions. Arid and semi-arid areas of Mexico account for 76 per cent of the population, 90 per cent of irrigated area, and 70 per cent of the

industries but these receive only 20 per cent of Mexico's total precipitation [Barker et al 2000].

Before 1992, groundwater rights in Mexico were tightly linked to land rights, much like in Asia today [Wester et al 1999]. In 1989, the National Water Commission (or CNA, 'Comisión Nacional del Agua') was created as the first step to separating the management of water from that of the agrarian economy, recognising the declining role of agriculture in the Mexican economy and the growing non-agricultural demand for water.



STRUCTURAL

Article 27 of the Mexican constitution that created the attenuated *ejido* land rights was modified by a constitutional amendment*; ejidatarios*, equipped with full (but qualified) ownership rights over land were now free to mortgage or sell their lands, provided two-thirds of the *ejido* community approved of the transaction and the ministry of agriculture and hydraulic resources was dissolved and a new ministry of agriculture and animal husbandry was created, leaving all water business under the unified command of the CNA, which was subsequently brought under the Federal Ministry of Environment and Natural Resources. A Basin Council was also created which became the forerunner of several other basin councils that got formed in the latter half of 1990s.

The 1992 Water Law retained centralised water administration with the CNA leaving little role for the state level Water Commissions. The provision of urban water and sanitation

services in Mexico was decentralised to the municipalities beginning in 1983. This decentralisation trend left little role for the states

Urban water supply and sanitation systems underwent major structural reform too. The urban water supply and sanitation function was vested in specialised Urban Water Boards – a financially autonomous public utility – constituted for each town, however, they do not enjoy autonomy in tariff fixation which is still a political decision of the Municipal Council.

Groundwater – which was the mainstay of farmers in central Mexico – remained a trouble spot. Groundwater depletion has been recognised as a problem area for long. For the first time, the 1992 Water Law created a legal-administrative instrument to bring some order into the groundwater economy. Since a new tubewell could be made only after obtaining a concession from the CNA, the ban on new groundwater structures got teeth for the first time.

The wide-ranging course of actions the Mexican government has taken to reform the nation's water management seems driven by the following key objectives:

(1) Make water infrastructure self-financing by withdrawing the government from its management;
(2) Improve the efficiency of water use by establishing tradable private rights on water as well as by involving users in managing water infrastructure;
(3) Restrict and even reduce groundwater depletion by the CNA by operationalising the authority to issue rights (concessions) to draw groundwater and by enforcing the concessions;
(4) Achieve basin level optimality in water use through basin level co-coordinating mechanisms.

We must remember that Mexican Irrigation Management Transfer (IMT) reform in Mexico was in some ways forced upon the government, especially from farmers in the north-western Mexico. The region has 45 per cent of Mexico's irrigated areas cultivated by commercial farmers. These strongly supported the president's decision to transfer irrigation management to farmer associations because they recognised that irrigation systems were going to get worse as the government did not have the funds for proper O & M of the systems. In Mexican states like Chiapas and in other developing countries where smaller, poorer subsistence landholders dominate irrigated areas, making a success of IMT would be much more difficult than where irrigated agriculture is dominated by large, commercial farmers.

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Creation of New Water Rights

A major aspect of Mexico's new water policy is the property rights reform considered by many to be 'sine qua non' for sustainable management especially of groundwater resources. Since groundwater is open access and the impact of pumping behaviour of farmers is not directly observable, groundwater depletion would continue until aquifers are exhausted or become prohibitively expensive to exploit. How to create private property rights in a fungible, invisible resource such as groundwater, especially where users are small and numerous, as in south Asia?

Mexico has created tradable private property rights in water by: first, declaring water as national property; second, allowing existing users to get their use 'regularised' by obtaining a concession from the CNA; third, by setting up a structure for enforcing the concessions; and fourth by levying a volumetric water fee from concession holders (barring irrigators) which would help generate resources to maintain water infrastructure. Under the new Water Law, all diversions of water, other than for direct personal use, are allowed only through concessions.

What has been the outcome and impact of this rights reform? Mixed, as of now. Large water users, especially industrial and commercial establishments have been quick to secure proper concessions and pay water fees to the CNA. Modulos and SRLs, who operate the surface water systems, are few, organised and therefore easy to bring within the purview of the concessions. By and large, municipal diversions have conformed to the volumes they are entitled to but, Municipal Water Boards have regularly defaulted on the payment of water fees to the CNA. One expectation was that the new system of rights would stimulate an active market in water but this expectation has been largely belied, partly because 'water rights are not rigidly enforced and legal processes to redress grievances are difficult, costly and drawn out".

The real difficulty has been with water rights of numerous agricultural users who account for over 80 per cent of water use and seem to be at the heart of the matter. One reason why tubewell owners keenly seek 'regularisation' is that they are linked to the formal economy through their dependence on the Federal Electricity Commission for power supply.

It is one thing to issue a concession to a tubewell; it is quite another to specify its volumetric water right and yet another to limit its pumping to the volume specified. Groundwater concessions merely regularise the status quo and do not aim to curtail present levels of groundwater use, except through ban on new tubewells, which can be more efficiently imposed by simply putting a cap on new agricultural power connections. Monitoring the actual extraction and enforcing it to 'entitled volumes' has, however, proved impossible.

Compared to tubewells, a far trickier animal is the *'bordo'*, a small tank-like water harvesting and storage structure, and

'presa's', that are somewhat larger, which have been proliferating in uplands of Mexico at a frightening pace, especially in areas with intensive livestock farming for meat or dairying. Under the new Water Law, *bordos* and *presas* which need individual concessions present a catch-22 situation for the Mexican experiment in creating private water rights. If their owners persistently avoid applying for concessions, the intent of the Water Law will be frustrated but if they begin applying for concessions in large numbers, the administrative logistics of processing a huge number of requests may prove a nightmare.

Yet, many farmers were worried that the Water Law may hurt the weak and the poor, especially in remote areas, who have no information, some times for months, about the ordinances and new time limits the CNA keeps announcing. Instead of dealing with the complex reality of the Water Law, the CNA's stance is bureaucratic: the law requires that applicants for concessions establish the absence of third party damage beforehand by producing a certificate from the municipal authorities. But it is common knowledge that anyone with some influence can buy such a certificate for a few pesos.

STRUCTURAL

Aquifer Management Councils (COTAS)

COTAS (Aquifer Management Councils) were born out of the recognition that concessions by themselves would be of little help in getting water users in the 'informal sector' to participate in sustainable water management, and that new mechanisms and structures were needed to engage this vital sector in implementing the spirit of the Water Law.

The idea of COTAS is bold; and the expectations from these structures is high.

A COTAS is expected "to be a promoter of Integrated Water Resource Management in the state bringing together different actors and stakeholders to protect the water resources in quantity and quality". A common expectation is also that the COTAS -

particularly, their state-level federation – will become a powerful instrument of implementing the law of the nation's waters, that they will interact with authorities and water regulatory agencies and provide decisive inputs on the creation, establishment, control and changes in water management plans.

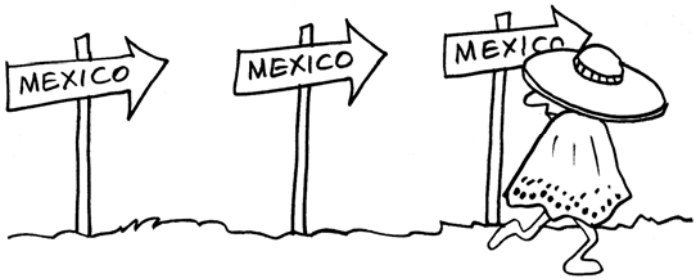
Above all, COTAS are expected to mediate between the state and the federal water authority and the water users they represent. This is why COTAS were designed as representational organisations. The sub-text in all this is that with their closer grass roots presence, COTAS will do what the CNA cannot: restrict groundwater extraction by enforcing the Water Law. *A fundamental design flaw in COTAS may well be in its concept itself: it is not allowed to provide what a majority of its members value most, viz, unrestrained access to groundwater*. The present role and future direction of the COTAS are unclear to say the least. The CNA expects them to implement the Water Law, in particular, it help in containing groundwater extractions to concessioned limits, and help in curbing illegal well-drilling. Doing this is the best way for a COTAS to drive away its members. For a member organisation to police and spy over its own members would be a curious role indeed.

Assessment and Lessons for India's Water Policy 2002

Water in Mexico

The water sector reform agenda Mexico has pursued during the 1990s is uncommonly aggressive and proactive and has produced wide-ranging changes in the way the nation's water resources are managed and has produced mixed results. *On the positive side, decentralisation of irrigation management can be considered a significant success*, even though irrigation management transfer to water user associations is not as complete and effective in some southern states as in central and north central states. In virtually all of the canal irrigated areas, however, operation and management of irrigation

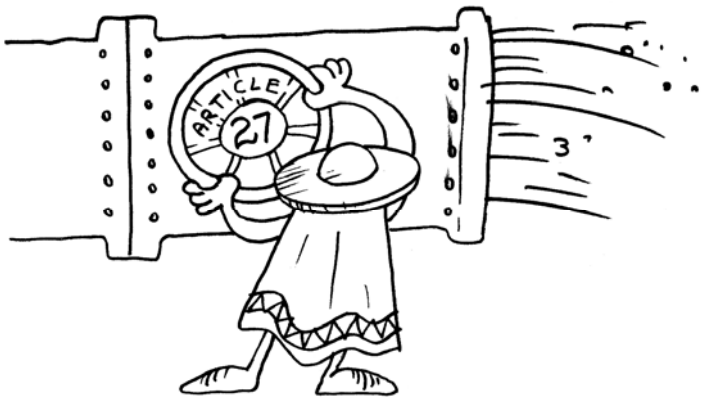
systems are largely undertaken by user organisations; federal or state subsidies here are close to nil.
Likewise, decentralisation of urban water supply and sanitation to local water boards has also met with notable success. Here too, while water fee collection has improved rapidly, water boards are still unable to generate



enough resources from fees to maintain and improve urban water supply
and sanitation infrastructure. It would be fair to say that it has succeeded in driving home the notion that water is national property, and what users can have is only a use right valid for pre-specified volumes and periods.

One must be cautious and circumspect in directly transposing the Mexican experience to India. The two countries have several similarities but important differences, too. Like India, Mexico is a large country but while it has two-thirds of India's geographic area, it has only 10 per cent of India's population. Agriculture is still an important sector for the Mexican economy; but its contribution to the national GDP is barely 5 per cent compared to 30 per cent for India. India has done well in terms of overall economic growth but it is still at least a good 20 years behind Mexico. President Fox's idea of removing rural poverty is to shift small

holders out of agriculture; in India, agriculture will have to be the parking place for the poor for decades to come. Mexico's agriculture is a big groundwater guzzler by the standards of the Americas but its annual use of 12 km3 of groundwater is trifling



compared to India's annual groundwater draft of well over 150 km.3 The most important difference is in the numbers: Mexico is finding it difficult to regulate its 70,000 tube well owners; on the last count, India had 20 million private pumpers, and this number has been growing at a rate of 1 million a year in recent years.

Mexico rewrote the basic rules of the game by which its water resources were managed. India enunciated a National Water Policy in 1987 and another one in April 2002 and little changed in the interim. Since water is a state subject, Mexico's experience will be more relevant and illuminating to many states – such as Gujarat, Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu – which are doing well in terms of economic growth but are bewitched by growing water, especially groundwater scarcity. States like Andhra Pradesh and Maharashtra have already been implementing their own models of irrigation management transfer; however, they are doing precious little to

rein in groundwater depletion on which their agricultural growth precariously rests. Mexico's experience offers little of value to the Indian states in dealing with the complex problem of regulating groundwater depletion. If anything, it dispels the notion that establishing and enforcing private water rights can be an important part of a feasible solution Mexico's experience thus far only suggests that creating private rights without being sure about its enforcement can result in mayhem, or worse, unmitigated disaster in a state like Andhra Pradesh, where over 2 million private pump owners will queue up for concessions if the full provisions of the Andhra Pradesh Land, Water and Trees Act 2002 are put into effect. Even more limited groundwater legislation such as the Maharashtra Groundwater (Regulation for Drinking Water Purposes) Act 1993, which merely tried to ensure a distance of 500 metres between irrigation wells and public drinking water wells has proved a resounding failure, if anything, because of "the complete absence of social support for the legislation"
[Phansalkar and Kher 2003].

The idea of COTAS – with suitable adaptation – seems worth experimenting with, not because it has much chance to work even in Mexico but because someone needs to get groundwater users together to talk about the resource and about their common futures tied to it. Many NGOs working on groundwater depletion in states like Gujarat – such as IWMI's North Gujarat Sustainable Groundwater Initiative, Andhra Pradesh's AP Well Programme, the Aga Khan Rural Support Programme in Gujarat – are trying to do: bring stakeholder groups together to talk about managing their shared resource. But with government support and legitimacy of the kind that Mexico's COTAS have, chances are that such NGOs would be able to create better, more representative coalitions of stakeholders.

Finally, there are interesting comparisons in the role of central and state agencies. For the new water policy to be effective, the central-state arrangement in India – with significant user activity on the ground in disregard of stated policy prescriptions – would require greater 'vertical articulation' of policy and institutional arrangement. It will be essential to get the states on board on key issues of policy, and far more so, on mega-projects such as the river interlinking project that the prime minister announced a few months ago. *Thus, while it is essential that community and users' concerns get registered as the new water policy becomes operational, there is still a vacuum at the state level.* This is a distinct similarity to Mexico, which too has not been able to find an effective balance between the role of central and provincial agencies. The national water plan, which is updated more frequently than the Indian Water Policy is, nevertheless as prescriptive in its tone and as devoid of an 'operational agenda', as is the Indian Water Policy.

STRUCTURAL

Water in Mexico

Leapfrog beyond 'modern' water paradigm

Sunita Narain

People who understand water management will tell you that India is a traditional water economy and that it has to make the transition to a modern water economy. In other words, the water sector has to become part of the formalised economy. As with any feel-right challenge, this is normally accepted to be true.

The point to understand is what this modern and formal water economy means in the rest of the world and what it will mean for us. In the industrialised world, industry and urban households use over 70 per cent of the water resources, while agriculture gets the remaining 30 per cent. In traditional water economies like India, the reverse is true: agriculture consumes over 70 per cent and industry and urban areas the rest. The point is not where we are. The point is: where are we heading?

The fact is that urban areas and industrial hubs in our part of the world are now putting greater pressure on water resources. Cities across the country need more water. They are powerful. Their elected masters work overtime to source water from far, and further, away. Delhi will get water from the Tehri dam, over 300 km away in the Himalaya; Hyderabad, from Nagarjunasagar dam on the Krishna river 105 km away;

Bangalore, from the Cauvery, about 100 km away. Udaipur used to draw its water from the Jaisamand lake but its drying up, and so the city is desperately seeking a way out of this new thirst. Add to all this industrial growth. Yes, the modern water economy is indeed at our doorstep.

But wait before rejoicing at the change. The fact also is that the 'informal ' water economy of rural India, tillers and all, still exists. The economy has not transformed from being agriculture-dependent to a manufacture-service sector driven one. The old needs water. The new demands more and more. Surely the change will come - carried on the shoulders of strife, even bloodshed: thousands of small and big mutinies, from Rajkot in Gujarat and Sri Ganganagar in Rajasthan, in which farmers have died defending their first right over water.

There is no denying India's water sector needs to be reformed, indeed transformed, so that it can provide clean and adequate water to all. But there is no established model for our transformation. We will have to leapfrog over the modern economic paradigm, to create our own - hybrid - version of the water future.

If we accept there is no model for us to emulate, then we are free to choose and reinvent our way of working water, based on need. We can then mix the new with the old to brew our own special bottle of the water of life. But most importantly, this also means that we cannot afford to be dogmatic about water-works.

Take irrigation. We know that over 20 million individual wells and tubewells rule India's world of irrigation. Groundwater is the main source of irrigation to agriculture, even as we have maximised our investments in creating surface water systems. Here, distribution losses and inefficiencies push up the cost, as compared to the informal world of the groundwater agriculturists who have learnt to maximise the value of their water investment

in making crops grow. But in the formal water vision, there is no place for the informal world of groundwater users. No policy can even account for them. No policy plans for them, for nobody understands how to manage this army of water users.

The point is to innovate, by borrowing from the past. The challenge is to enlist this army into managing their resource better; they merely need to recharge the well to live off its annual water interest. We can learn here from traditional systems of harvesting water. Millions of disaggregated and diverse structures across the county. But all of them built to also recharge the groundwater - holding the rain, like Earth's sponges, and enhancing subsurface flows. Is it possible to root for conjunctive irrigation - combine the big and the small, maximise our rainfall endowment and minimise distribution losses? Dare we re-discover the magic of the old systems of water augmentation and combine these with all the new answers - water efficient crops, diversification of crops, pricing electricity to ward off over-extraction of water?

Now take the modern dogma of managing water through pricing. We should price water: rich cities and the industries of rich India need to pay for the water they use. But the rich water-users are also becoming great wasters of water, and aren't leery of financing it. And as every city today extracts water from cleaner upstream sources and discharges its wastewater downstream, people living here find the water they get is not fit for drinking.

So let's innovate, learn the water-prudence of the modern world. A city like Copenhagen, from using 200 litres per capita per day of water, today uses less than 110 litres per capita per day. Why should Indian cities first become wasteful, and then learn the science and art of efficiency? Similarly, the world has only now begun to understand that it will need to practice the art of recycling and reusing wastewater. Why should we not, as we begin to generate more and more waste, invent the most modern

waste management system that reuses every drop of water discharged?

To be modern is not to 'catch up and keep up'. Being modern is being novel; it is a mindset that skips nimbly beyond. I believe all that stops us is our own lack of imagination. Can't we be modern, turn this lack into the freedom to dream of water for all?

NOTES

Water reforms