

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

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### India's Water Policy, 1987 and 2002

The new water policy adopted by the government of India in 2002 [Gol 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,



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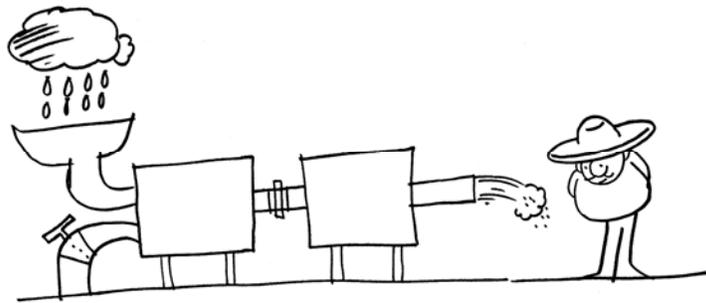
which changed nothing in the way we managed our water resources, the 2002 Water Policy too may turn out to be a 'paper policy'

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### **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 early 1980s. 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.



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



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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.
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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.

#### STRUCTURAL

##### **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.

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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'.

#### Water in Mexico

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

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*'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.

#### **Aquifer Management Councils (COTAS)**

#### **STRUCTURAL**

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 -

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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**

The water sector reform agenda  
Water in Mexico 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

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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



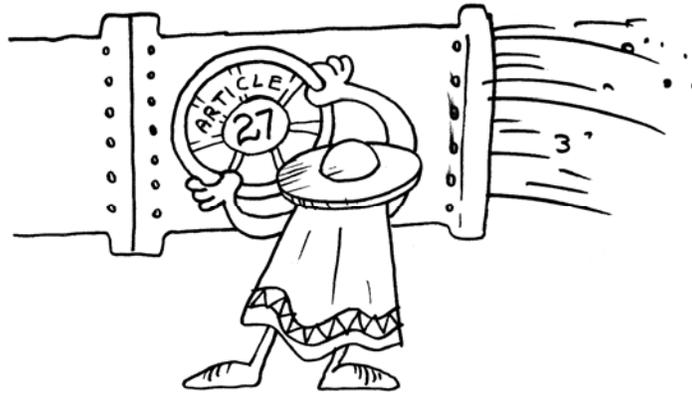
enough resources from fees to maintain and improve urban water supply

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

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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 km<sup>3</sup> of groundwater is trifling



compared to India's annual groundwater draft of well over 150 km<sup>3</sup>. 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

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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.

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**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. ▶

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Water in Mexico

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