



INFOCHANGE

agenda

ISSUE 3 OCTOBER 2005

THE POLITICS OF WATER

Who controls
water resources?

How much is
water worth today?

Who suffers as a result
of water scarcity,
and who gains?

Is water a social good
or an economic good?

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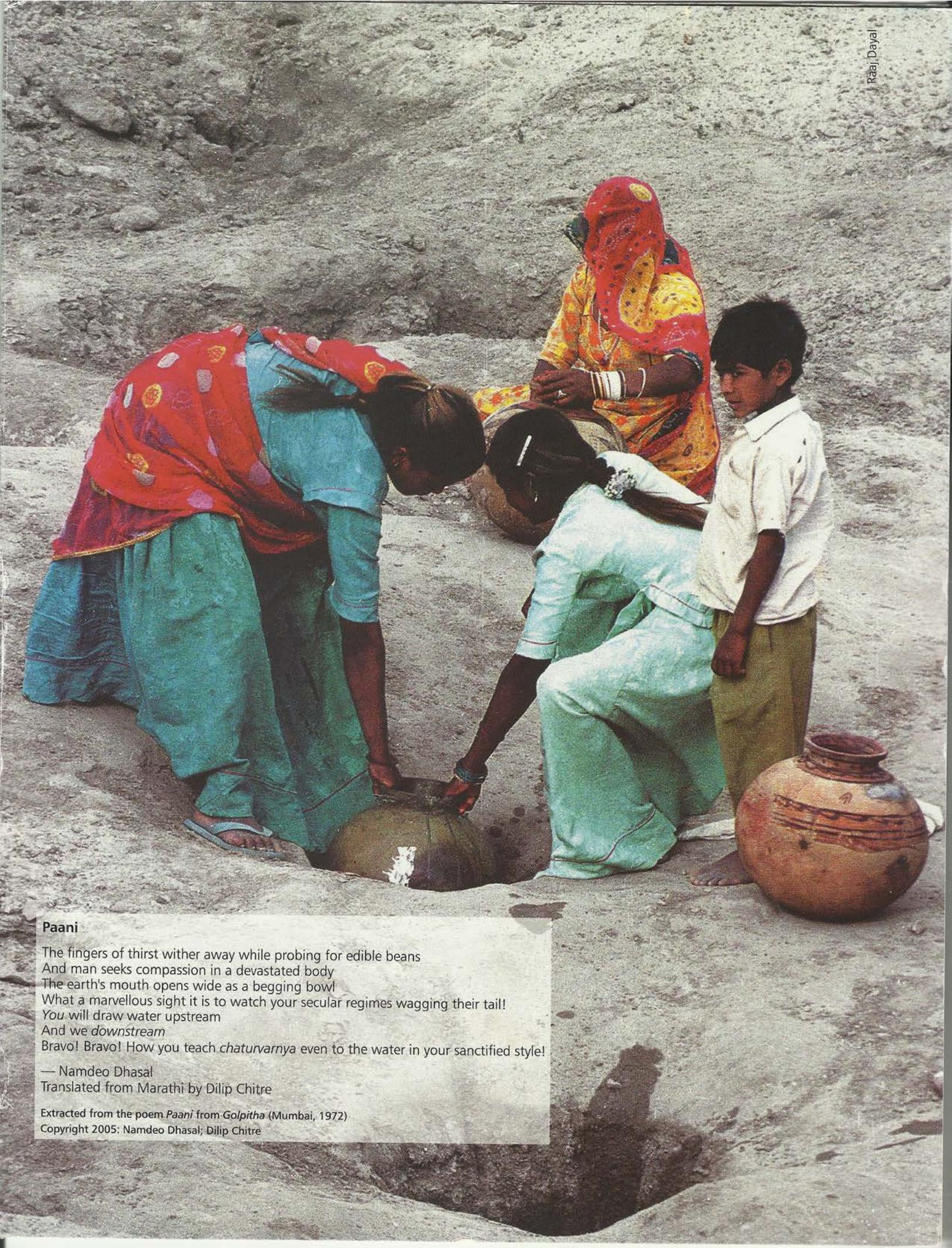
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Paani

The fingers of thirst wither away while probing for edible beans
And man seeks compassion in a devastated body
The earth's mouth opens wide as a begging bowl
What a marvellous sight it is to watch your secular regimes wagging their tail!
You will draw water upstream
And we *downstream*
Bravo! Bravo! How you teach *chaturvarnya* even to the water in your sanctified style!

— Namdeo Dhasal
Translated from Marathi by Dilip Chitre

Extracted from the poem *Paani* from *Golpitha* (Mumbai, 1972)
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The political economy of water

REHMAT BI, A MUMBAI SLUM-DWELLER, pays Rs 125 every month to people living in the lane behind hers, so she can collect water from their tap. Sagira, a pavement-dweller, is worse-off: she buys water at Rs 5 a *handi*. Others in Mumbai report how much they've paid to local water mafias and elected representatives for 'unofficial' taps. Those who cannot afford to buy water or pay the bribes must wait till nightfall and then surreptitiously steal the next day's supply from nearby housing colonies. In Harijan Basti in Delhi, Simla Devi pays Rs 20 every day to drivers of Delhi Jal Board tankers to allow her to siphon off eight drums of water. Those tankers are supplying water to middle class households which, even though they pay for it, do not get sufficient municipal water.



Alessandro Marongiu

In Chennai, an overwhelming majority of citizens — including the middle class — are buying water from the city's fleet of 1,300 tankers. These tankers in turn make forays into the farmlands surrounding the city, buying the water from farmers' wells. This is water taken away not just from agriculture but from the drinking water supplies of rural communities. But with agriculture in crisis, farmers find it more profitable to sell their water than farm their lands. Meanwhile, in Chhattisgarh, 2,500 families of six villages are up in arms against an industry that threatens to construct a 'private' dam on the river Kurkut.

These are some of the stories that are told in this issue of *InfoChange Agenda*. The stories illustrate inequities in access to water supply. They ask how one of the wettest countries in the world has been reduced to a water-insecure one.

But more importantly, they ask who suffers and who gains as a result of these inequities. In Mettur, Tamil Nadu, where communities lack drinking water but industries draw plentiful supplies from the Mettur reservoir, G Madheshwaran of the West Gonur Farmers Welfare Association asks, "How is it that

there is always plenty of water for industries but never enough for people's basic needs?" Yamunabai Uikey of Bazargaon village in Vidarbha, Maharashtra, where villages sometimes get water once in 15 days, observes the colossal amounts of water being supplied to the neighbouring water park and 'snowdome', and asks, "What is there in all this for us?"

What, indeed, are the political and economic pressures, pulls and vested interests that exploit and perpetuate water inequities?

There is increasing evidence that global commercial interests, international aid agencies and national governments are conspiring to transform water from a public resource into profitable enterprise. Several international corporations are waiting in the wings to expand a \$ 287 billion global water market into India. There is a huge market being exploited by the packaged water industry, and it's growing at 40% per annum. The government is increasingly dependent on aid for water infrastructure projects from institutions like the World Bank. As liberalisation and free markets are the guiding principles of these agencies, they are pushing full cost recovery and reduced public control. This is shifting the flashpoint for water conflicts from agrarian basins and rural areas to the cities, where the battle is on for the control and management of municipal water supplies.

The battle is also bringing to the public consciousness the polarised debate over water as an economic good, a commodity that can be priced, and water as a social good, a basic need and a fundamental right. This has meant that where earlier only activists or engineers questioned water and infrastructure development policies, the middle class householder now questions the status quo, along with the slum-dweller and the environmentalist.

If there is a positive side to the water inequity it is this, that the middle class too are beginning to be aware — as prices keep rising, as the water table sinks ever lower, as the need for tanker-supplied water goes from occasional emergencies to regular to every day — that water problems connect them to the poor who they see standing in line for hours or who have to buy water at prices far higher than they do.

This issue of *InfoChange Agenda* attempts to question the paradigm that India's water policies and institutions are built on and to examine how our fundamental right to water is exercised, how the government ensures that it is upheld, and how the political economy operates to walk roughshod over that right.

Dry days ahead

In just 50 years a water-rich nation has been reduced to a water-insecure one. By 2025, the per capita availability of water is likely to slip below the critical mark of 1,000 cubic metres. And with 82% of our villages overdrawing groundwater to meet their needs and cities ferrying water from peri-urban areas, India is close to exhausting its groundwater reserves. What has gone wrong?

SUDHIRENDAR
SHARMA

"PREDICTION IS VERY DIFFICULT, especially if it's about the future," said Niels Bohr. But assessing India's water future doesn't seem so difficult. After all, in a little over half-a-century of independent existence, a water-rich nation has been reduced to a water-insecure one.

Between Cherrapunji's 11,000 mm and Jaisalmer's 200 mm, India averages 1,170 mm of annual precipitation. Yet several regions, in what is by any standards one of the wettest countries in the world, experience desert-like conditions. Thanks to an electoral politics that sustains itself on subsidies, an inefficient water bureaucracy, and a multi-ethnic society that is wasteful in its habits, water has become the scarcest resource in India.

Over the years, the annual per capita availability of renewable freshwater has shrunk alarmingly. From a high of around 5,277 cubic metres in 1955 it dipped to below 1,820 cubic metres in 2001.

The projected increase in population by the year 2025 indicates that the per capita availability of water is likely to slip below the critical mark of 1,000 cubic metres. Though projections vary, India's population by 2050 will in all probability balance between the low variant of 1,345 million people and the high variant of 1,581 million people.

The fact that most of this population growth will be accounted for by urban areas will add to the existing water crisis in the cities. By 2050, 48% to 61% of India's population will be living in urban areas. Even if the middle variant of 55% is taken into consideration, 800 million out of the projected total population of 1,450 million, will be in urban areas, adding an unprecedented 500 million people to the present urban population of 309 million. While rural water demand is assessed on an allocation of 40 litres per capita per day (lpcd), the corresponding urban demand is against a norm of 135 lpcd. A population shift means additional demand on already shrinking urban water resources. If the accepted level of allocation (135 lpcd) is to be sustained in the year 2050, each of the metros will have to search for fresh sources of water to meet the growing demand. Already, cities like Delhi, Bangalore and Chennai ferry water from as far away as 200 km. Should this trend continue, rural areas will be robbed of their water, creating a deep rural-urban divide on the one hand and an inverse impact on food production in the countryside on the other.

The ongoing tussle between Uttar Pradesh and Delhi on sharing

Ganga waters, and the recent bloodshed over sharing water from the Bisalpur dam between villages and the city of Jaipur are precursors of a scary water future.

Inequities in distribution

The process of water distribution has continued to encourage inequality. Not only have the rich been served at the cost of the poor, they have literally been getting water free. Water tariffs have remained lowest in the country's urban centres. In Delhi, Mumbai and Chennai, water is supplied at Rs 0.5, 1.6 and 2.7 per cubic metre respectively. This means that the rich pay a fraction (less than 10%) of the actual cost of producing potable water.

Such low tariffs can only encourage wasteful water utilisation. No wonder some 30% of all potable water gets flushed down the toilet at a time when an estimated 170 million people in urban areas have no access to safe water, and the total subsidy on water is accumulating at \$ 1.1 billion a year.

The poor, on the other hand, pay 8-20 times what the rich pay to get water from unreliable sources. While the poor bear the brunt of this inequality, water losses continue to accumulate.

At one extreme are a sizeable number of urban poor who don't get assured water supplies, and on the other are the urban rich whose defecation is subsidised by the state. For the poor, the subsidy acts as a double-edged sword. First, they don't seem to benefit from it and, second, the water sources they depend on get polluted by untreated sewage flushed down by the rich.

Can the water utilities ensure equity in water distribution by reaching out to the unreached? Can the subsidy be extended to the poor by re-adjusting water tariffs upwards of the prevailing rates for the rich? Or will electoral politics seize every conceivable opportunity to promise water through new loans and costly projects such as riverlinking?

Dwindling reserves

Groundwater has been the backbone of the Indian economy, and, consequently, a critical factor in India's water future. If falling levels in several parts of the country are anything to go by, we are close to exhausting our groundwater reserves, which are shrinking faster than they can be replenished. While the government estimates that total groundwater use will be around 230 billion cubic metres (BCM) in 2010, some current estimates of groundwater use already exceed 250 BCM.

Added to this are recent instances of groundwater appropriation by soft drink and packaged water companies. The long-standing conflict between Coke and the Plachimada village panchayat has exposed the vulnerability of the poor, as groundwater extraction by corporates assumes major proportions.

The problem is made worse with 82% of all villages surveyed by the National Sample Survey Organisation 'self-supplying' water for domestic use by using groundwater. Any measures to control groundwater extraction may need to take the legitimate rights of users into account. Recent groundwater legislation in Rajasthan, Maharashtra, Orissa and Himachal Pradesh has been designed to restrict villagers' access to groundwater.

A recent study by the International Water Management Institute in six cities (Indore, Nagpur, Bangalore, Jaipur, Ahmedabad and Chennai) notes that in the latter three cities the contribution of groundwater in meeting the city's domestic and municipal water requirements ranges between 72 and 99%. Most of these cities also have a thriving tanker water economy (the biggest is in Chennai).

Annual revenues from the tanker water economy in these six cities alone are reported to be in the region of Rs 100 crore. Extend the figure to other cities across the country and this may well be the biggest informal industry, thriving solely on the failed municipal water supply system. This informal water economy depends entirely on groundwater extraction from peri-urban areas and, in the absence of any regulation, has led to the emergence of 'well-fields' all around cities.

As groundwater shrinks from extractable limits, owing to erratic rainfall patterns and reduced recharge, the water sector will see some dramatic changes in the years ahead. More important, agriculture will be significantly affected as growing urban and industrial demands squeeze water out of the farming system.

The steady decline in exploitable groundwater reserves shifts the onus to surface water that, estimates indicate, will have to contribute no less than 63-65% of our total water requirement in the decades ahead. This shift is critical since, so far, groundwater has informally, and in a democratic and decentralised manner, been at hand for everyone who can afford a diesel pump.

This is likely to change. Projections indicate that the proportion of surface water in meeting domestic and municipal requirements will be between 55 and 60%; for industrial use it may range between 69 and 72%; for power, it will be between 80 and 82%. All other uses will have to be met only by surface water. However, such demands are pitched against shrinking ponds and tanks, marginal rivers that have run dry on account of the encroachment of catchments, and heavily polluted major rivers.

Cropping squeeze

Meeting the food requirements of a huge population in 2050 is another challenge, as there will be fewer people producing food on farms. However, urban per capita consumption of cereals is much less than rural per capita consumption, hence our food

output may have to rise 50% over present levels. Urban-rural population shifts also indicate diversification of cropping patterns from the traditional rice-wheat system. But the present investment policy continues to focus on rice-wheat cropping patterns and is targeting an additional 35 million hectares under irrigation, at a whopping investment of Rs 560,000 crore over the next three decades. Such policies directly contravene emerging trends and encourage farmers to grow crops that are economically remunerative in the open market, even if they consume more water.

Isn't it a paradox to talk about water-use efficiency when there are major irrigation projects on the anvil? It tosses up a 'surplus' scenario for a largely 'scarce' resource. Unless farmers are given incentives and market back-up to grow water-efficient crops, the rural-urban conflict on sharing surface water (from irrigation dams and canals) will snowball into a major crisis in the years ahead.

Statistical puzzle

India's water sector is a great big jigsaw puzzle; inconsistent and unreliable data is constantly being churned out. The Department of Drinking Water Supply (DDWS) claims that 94% of all rural habitations were given water supply by early-2004. With only 6% of the population left to be covered, the department may soon need to be closed down or its priorities shifted to other pressing demands of the rural sector!

If only 6% of the population remains to be covered, why has the DDWS sought Rs 404 billion for rural drinking water coverage in the Tenth Plan (2002-07) as against an expenditure of Rs 167 billion for the previous plan period? It would appear from the requested budget that the claims about drinking water coverage are indeed hollow.

There are similar variations in coverage and projected demand for the urban water sector. While the urban population has been projected to increase, the financial allocation for urban water supply for the Tenth Five-Year Plan has been pegged at around Rs 282 billion. Although here too it is claimed that 95% of the urban population has been covered, the ground realities are far from what's being claimed!

Despite critical shortfalls in coverage and rising demand, the government is finding it difficult to fund, monitor and manage both rural and urban water infrastructure, thanks to the worsening state of public finances. Under such conditions, issues of quality and equity of distribution remain grossly unattended, both in rural and urban areas. The signs are ominous.

The politics of convenience

Ever since water was moved from the socio-cultural domain of community control to the techno-economic sphere of bureaucratic management, it seems to have gone from being seasonally scarce to being chronically unavailable. Although part of the problem lies in rising demand from an increasing population, mismanagement remains the core issue.

For the ruling elite, water scarcity is, quite simply, a political

tool. But governments have rarely attempted to diagnose and solve the crisis. With water under the full jurisdiction and control of the government, through a myriad ministries and institutions, communities have little idea about who actually is in control.

This multi-ownership has helped successive governments evade crucial governance issues, as no one is willing to risk opening the debate on rationalisation of water tariff at the cost of losing an electoral base. Consequently, inefficient municipalities have been stretched to their limits, with mounting debts. These civic bodies are on the verge of collapse.

The municipality in the picturesque town of Simla is a case in point. Supplying potable water at an unbelievable rate of Rs 1.80 per kilolitre (100 litres) to households, and Rs 6 to the hotel industry, the municipality finds itself in dire straits. The actual cost of this heavily subsidised water is Rs 20 per kilolitre. No wonder annual losses amount to Rs 25 crore every year.

It's the same for every civic body whose losses have been allowed to accumulate over decades. The result: erratic and unreliable water supply, as demand outpaces supply. It's this apathy that has fed the packaged water industry — the bottled water business is growing at around 30-35%.

Municipalities are not only overstuffed they are also inefficient. Consequently, water cess recovery is poor and water pilferage carries on unattended. We need strong political will to reduce staff, cut operational costs and increase efficiency.

Policy of contradictions

Launching the National Water Policy 2002, then Prime Minister Atal Behari Vajpayee said: "The cornerstone of the new National Water Policy should be an explicit recognition that water is a national resource and...the policy should also recognise that the community is the rightful custodian of water." It seemed as though the 'communitisation of water resources' was on the cards.

In reality, though, it was just the opposite. Following the adoption of the policy, the newly-formed state of Chhattisgarh sought to privatise water supply from a semi-perennial river, the Sheonath. This unprecedented move opened up possibilities for the privatising of natural resources, unheard of in a country that had always insisted on restoring community rights over resources.

Though the prime minister's statements were laudable, the policy document sought to pursue divergent interests. By emphasising private control and by declaring water an 'asset', the policy in effect questioned a fundamental right of the people. The policy paper did not explicitly mention the protection of interests of poor and marginalised areas.

No wonder then that in order to woo foreign direct investment, the government of Kerala has been granting private investors easy access to its groundwater resources. Since the policy and the law are unclear about who the primary beneficiaries of groundwater are, the water bureaucracy is allowed a free hand in making profits through private investment.

The then prime minister had also said: "Depletion of groundwater resources, on which millions of rural families depend for their drinking water needs as well as irrigation, continues unabated." Surprisingly, even after years of deliberation there are no clear directions on the ownership and restrictive exploitation of groundwater in the country.

Despite a change in government at the Centre, the principles within the policy appear to have been reinforced. Crucially, the fact that centralisation — as seen in recent initiatives like riverlinking, Sethusamudram, etc — is in direct contravention of constitutionally-mandated decentralisation through the 73rd and 74th constitutional amendments has gone largely unnoticed.

The subsequent enactment of water policies by respective state governments reflects a neglect of the rural poor at the hands of the urban elite. The appropriation of surface and groundwater resources to meet the needs of growing urban populations has already led to violent conflicts in Rajasthan.

Is the water bureaucracy oblivious to such trends, or is it pursuing a course over which it has little control? Crucially, the resource-constrained water sector is heavily dependent on leading lenders like the World Bank and the International Monetary Fund that have full cost recovery and reduced public control over water resources as their guiding principles.

Ironically, the principle of full cost recovery and reduced public control has been the cause of growing civil unrest in countries like Bolivia, the Philippines, Paraguay, Argentina and Ghana. The privatisation of Delhi's water supply is being contested on similar grounds. Let us read the writing on the wall.

Future imperfect

Where does all this lead us? Can the core issue of effective water management be addressed in the current political scenario? Are there any mechanisms within the government that provide space for mainstreaming prevailing social concerns?

The central issue is re-defining water governance. Unless alternative institutional arrangements are examined along with the dilution of control of existing institutions, the situation is unlikely to improve. In the context of groundwater, the real challenge will be to create management principles that address ecological, equity and sustainability concerns.

There is also the need to identify, strengthen and provide legal validity to local institutions that ensure equitable and sustainable use of water, within ecological confines. Institutional reforms, differential water pricing and water conservation at all levels are pivotal issues that must be addressed in order to tide over the present scarcity and the emerging threat of conflicts over water.

Dr Sudhirendar Sharma is a Delhi-based water expert and development analyst. He is associated with The Ecological Foundation

2015: 334 million Indians will still lack access to safe water supply

Inequities in water availability are a reflection of unequal development within the country. Even if we achieve the Millennium Development Goal of halving the population without access to drinking water and sanitation by 2015, 244 million people in rural India and 90 million in urban India will still not have access to safe, sustainable water supply

DARRYL D'MONTE

TWO OF THE MOST CRUCIAL UN Millennium Development Goals (MDGs), set in 2000, are to halve those in the world without drinking water and sanitation by 2015. India, as the poorest country in the world in terms of number of people, would also have the correspondingly highest number of people without access to water in absolute terms, although there may well be a higher proportion in some African countries.

According to a document recently published by the Delhi office of the international NGO, WaterAid, even if this target is reached within a decade, as the UN seeks to do, “29% of the rural population, or 244 million people, and 23% of the urban population, or 90 million people, would still lack access to adequate safe, sustainable water”.

There is some ambiguity over what “sustainable” means in this context. So far, an area has been considered “covered” if a tubewell has been installed in a rural area to serve 250 persons. It is another matter altogether that there might not be a drop of water in the pump due to inadequate maintenance or over-exploitation of underground water. Or, worse still, in certain pockets of West Bengal and more recently Uttar Pradesh, discovering traces of arsenic (and, elsewhere, fluoride) in such groundwater, which renders it undrinkable.

To introduce some clarity, WaterAid suggests some indices to gauge “coverage”, in addition to those employed by the central government's Department of Drinking Water Supply. These are mainly, the provision of at least 40 litres per day (lpd) per person in rural areas and 136 lpd in urban areas. In villages, this ought to be within 1.6 km of a home, or without having to climb more than 100 metres in hilly areas. Needless to add, a single handpump should serve no more than 250 people, and there ought to be water for 365 days in the year.

It is obvious that on this count, villages fare poorly. The department claims that by April 2004 as many as 94% of village homes — some 720 million people — were “fully covered”, an astounding statement that V K Duggal, the secretary at the time (now home secretary), regurgitated at the Global WASH (Water, Sanitation and Hygiene for All) Forum in Dakar in November 2004. While it is certainly true that the government has made progress on this score, anyone with the faintest acquaintance with rural realities will realise that we are still very far away from slaking the thirst of village India.

As WaterAid observes, the official statistics relating to the provision of “government water points” do not even address

the issue of reliability of such supply, either in terms of quantity or quality. “Uttar Pradesh (with a million out of the 3.5 million handpumps in India) and Bihar are considered 100% ‘fully covered’, yet large numbers of people in these states suffer from water-related diseases (including gastroenteritis, cholera and dysentery)... Whilst 94% of rural habitations may well be fully covered, this is not the same as saying that 94% of the population only use safe water points as they may also be using their unsafe private wells.” The department does concede some of these problems, encapsulating them under the euphemism “slippage”, which may, according to a Tenth Plan (2002-2007) working group, be as high as 15% of village homes.

India's urban population, which was 280 million in 2000, is likely to rise to 400 million by 2015. Despite this, the country is likely to meet this MDG in cities. Between 1990 and 2000, for instance, the government was able to provide an extra 8 million urban-dwellers with water every year. Here again, it tends to lay greater emphasis on numbers of community taps or household connections installed, rather than the quality, reliability and sustainability of services. Chennai, it is well-known, is one of the worst-off in this respect and an enormous number of households rely on tankers: each middle class family has to spend Rs 400-Rs 500 a week on drinking water, in a crisis. By some estimates, the average availability of water in Mumbai, Kolkata, Delhi, Chennai and Hyderabad is 50-70 lpd per head. Bangalore is much better off, with 120-150 lpd.

The disparity within urban areas is also obvious. WaterAid states that slums constitute at least half the urban population, and it is fair to assume that only half the urban slum population has adequate access to safe water. Its estimate is that 155 million out of the 280 million urban population, or 55%, enjoyed access in 1990, against the official estimate of 88%. According to a World Bank report on 27 metropolitan cities in all of Asia, Chennai and Delhi are at par with the worst-performing cities in terms of hours of availability per day.

Indeed, as the recent flooding in Mumbai has underlined with a vengeance, instead of estimating what it costs to provide drinking water (and drainage) in a city, the authorities ought to calculate what it costs *not* to provide such basic amenities, including sanitation. According to Marie-Helene Zerach, who has published a book titled *Water: Unreliable Supply in Delhi* (Manohar, 2000): “The unreliability of water supply costs Delhi Rs 3 billion annually, that is double the municipal expenditure on water.”

WaterAid has also studied two electoral slum wards in Delhi. In Bhalaswa, one of the fringe ('peri-urban') areas, standpost water is not potable in the resettlement colony. Drinking water is provided by tankers, which are irregular. In an unauthorised colony there, timings for supply are not fixed and the quality is poor. Few colonies depend exclusively on tankers. Zerah found that 13% of all city households did not receive water every day: if this happens in the national capital, which is pampered with civic services, the situation in the rest of the country can well be imagined.

A third study conducted by WaterAid India of Water and Sanitation in Madhya Pradesh found that 40% of households in that state do not get 40 lpd; the proportion of homes not covered could be as high as half, in some districts. There were 1,545 villages with 2,767 water sources that had been contaminated with fluoride. The surest sign that water quality is deteriorating in this large state is that the number of people suffering from waterborne diseases almost doubled between 1998 and 2003. This alarming increase indicates that rural areas get a raw deal in this respect. The Drinking Water Mission, set up under ex-prime minister Rajiv Gandhi, has done commendable work in Madhya Pradesh, particularly in drought-prone Jhabua district. But much more needs to be done. Madhya Pradesh also used to hold a month-long Pani Roko Abhiyan, where villagers cooperated in building their own

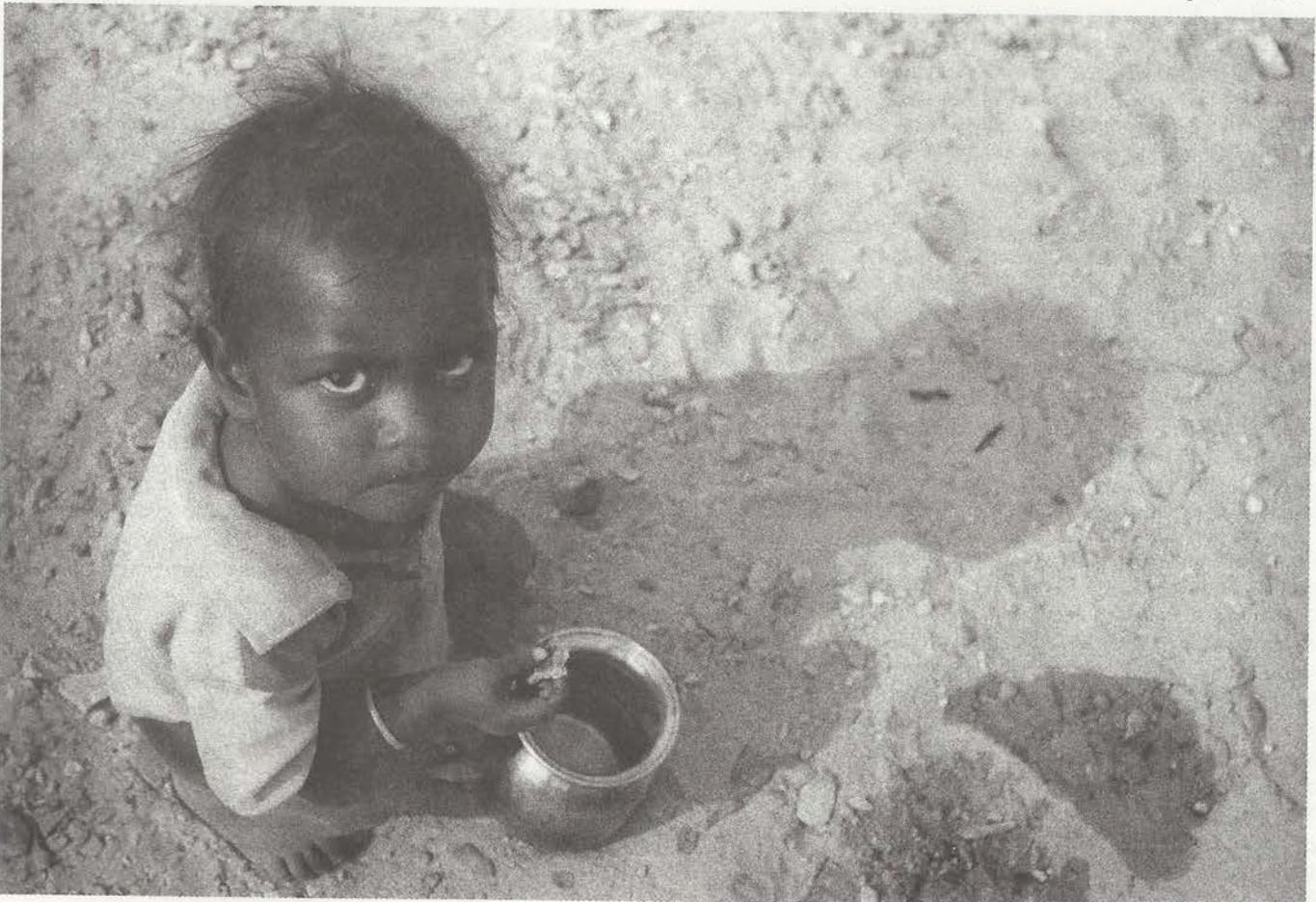
rudimentary water-harvesting structures, but this has obviously only touched the fringes of the problem.

It is clear that disparities in water availability are a reflection of unequal development within the country. To begin with, there are differences in living standards between the states, with the so-called 'BIMARU' states of north India — Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh — being the worst-off. Within metropolitan cities, the condition of slum-dwellers is not just bad in terms of quantity and quality; volume for volume, these marginalised sections pay far more for a bucket of water than those who have piped supply.

The high cost the country is paying by way of ill health and morbidity due to lack of safe water sources is seldom considered. One can loosely measure the progress of any country by a simple yardstick: whether the water from its taps is potable.

The central government is earmarking huge sums to provide this most basic amenity. The Department of Drinking Water Supply is seeking Rs 40,400 crore for the Tenth Plan, as against only Rs 16,700 crore in the previous plan.

If as much as 94% of the country is covered, does this call for expenditure of this magnitude? Experts are questioning the capacity of the government to cover unserved villages, and are



Desmond Roberts

The high cost the country is paying by way of ill health and morbidity due to lack of safe water sources is seldom considered. One can loosely measure the progress of any country by a simple yardstick: whether the water from its taps is potable

looking to self-help schemes for solutions or, at least, to panchayats to supervise official schemes. WaterAid also observes that many municipalities have bigger budgets than do some states and so can provide water, but “there is little transparency in information-sharing or public debate in the budget allocations”. The controversy surrounding a move by the Delhi Jal Board to privatise part of its operations is indicative of this trend. The NGO Parivartan has criticised this tendency, prompting Delhi Chief Minister Sheila Dikshit, this August, to promise to make it more transparent.

NGOs are beginning to scrutinise operations within major cities and cite instances of moves towards privatisation. In 1998-99, Vivendi of France signed an MoU with the Bangalore Water Supply and Sewerage Board for privatising water supply in two divisions. After protracted opposition from employees, the proposal was dropped. Subsequently, Thames Water set up shop in Bangalore and got a contract for a leakage prevention project. With the formal launch of the Greater Bangalore Water and Sanitation Project, it hopes to be one of the companies to get an operating contract funded by the Japan Bank of International Cooperation (JBIC).

Compagnie Generale des Eaux, formerly Vivendi, has signed a similar contract for “24x7” supply of water to Hubli-Dharwad, Gulbarga and Belgaum and, soon, Bangalore. USAID has already begun a water and sanitation project that involves credit-rating, setting up co-financing initiatives with state and local governments, citizens, banks, financial institutions, etc, to finance projects. The JBIC loan, worth Rs 3,300 crore, is for increasing water supply to Bangalore through the Cauvery with about 500 million lpd; the project is now in its second phase. The World Bank itself has moved away from outright privatisation of public water utility assets, as it announced at its Washington headquarters during World Water Week this March, and is advocating public-private partnerships.

There are two concerns about these massive funding projects in urban areas, both by the central government and private investors. The first, as we have seen, may be a waste of resources on hardware, with no thought given to the sustainability of this infrastructure. As for private partnerships, it is right in principle to move away from subsidies and require all consumers to bear the cost of providing water. However, when more than half the population of the most-populated metropolis, Mumbai, lives in slums and is therefore “illegal”, how will this majority be served when there is no security of tenure? Furthermore, as the South Africa experience shows, when poor consumers are metered and cannot pay for their supply, they are cut off. This has been the cause of severe cholera epidemics in that country.

The right course would be for better-off consumers to pay more for their water supply — by imposing tariffs on volumes consumed — so that the poor can be cross-subsidised. There is also the anomaly that slum settlements are, for the most part, not connected to sewerage systems. Apart from the health hazards, this ends up in the homeless subsidising the housed when it comes to sewerage, since the bulk of the revenue earned by all cities in this country is from indirect taxes like excise, payable on all goods bought.

If any city is seriously trying to reform itself, it should begin by raising property taxes, which have been frozen at unrealistic levels for decades. This alone would raise the revenue required to provide water and sanitation.

There is also the danger, in the current infatuation with economic liberalisation, of placing the bulk of resources in cities and leaving rural areas to fend for themselves as best they can. This would perpetuate, if not worsen, the tremendous disparities that already exist, with three in every four citizens now eking out an existence in the countryside. Anil Agarwal, who founded the Centre for Science and Environment in Delhi, used to observe that it would be impossible for every Indian (or Chinese, for that matter) to have a flush toilet in his home: the water resources of our country do not permit this. We must start looking at all the alternatives that exist, rather than permitting the reckless urbanisation and construction of conventional homes that have become all the rage.

In Europe, environmentalists are already beginning to introduce “ecological sanitation,” which reduces dramatically the volume of water used. Instead of only looking to increase supply of this most precious resource, we should also consider curbing demand at least in urban areas that are drawing a disproportionate amount. It is worth remembering that despite a very much higher lifestyle, countries like Holland and Germany make do with about 130 lpd per capita, which shows how much more efficiently they use — and re-use — this “blue gold”.

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30 litres for some, 1,600 for others: Inequities in Delhi's water supply

An average room in a five-star hotel in Delhi consumes 1,600 litres of water every day. VIP residences consume over 30,000 litres per day. But 78% of Delhi's citizens, who live in sub-standard settlements, struggle to collect or buy 30-90 litres per capita per day

ARUN KUMAR
SINGH

ACCORDING TO THE BUREAU OF INDIAN STANDARDS (BIS), the average water requirement of a Delhi citizen is 160 litres per capita daily (lpcd). The Planning Commission has estimated the average requirement for different income groups — 130 lpcd for lower-income groups, 150 lpcd for middle-income groups, and 200 lpcd for higher-income groups. The average comes to 160 lpcd. Let us now look at the water availability in Delhi.

Delhi, as a city, ranks highest in per capita availability of water — about 280-300 lpcd. But the distribution of this water is extremely inequitable. According to officials, different quantities of water are provided to different settlements since their standard uses differ, and certain standards have been established in this regard. The standard for planned colonies is 225 lpcd, for resettlement colonies and urban villages it is 155 lpcd and for jhuggi-jhopdi (JJ) clusters it is only 50 lpcd.

According to a recent report, the average water consumption in a five-star hotel room is above 1,000 litres. For instance, the average consumption of water in a Hotel Taj Man Singh room is 2,000 litres a day, while at the Oberoi it is 1,120 litres per day per room. The average consumption at the Taj Hotel is 1,400 litres per room, while Janpath Hotel, including its banquet halls and restaurants, consumes around 67,000 litres per day. On an average, each room in a five-star hotel consumes 1,600 litres of water every day.

VIP residences do not lag far behind in guzzling water. For instance, the prime minister's house at 1 Race Course Road accounts for around 73,300 litres of water per day, and the presidential residence, Rashtrapati Bhavan, consumes about 67,000 litres per day. Similarly, ministers' residences consume 30,000-45,000 litres per day.

The hutment clusters of southwest Delhi, on the other hand, are in a state of perpetual water crisis (see 'The price people pay'). In 1999, Delhi had 1,100 slum clusters with an estimated population of 3.2 million. In addition, there were 1,500 unauthorised colonies with an estimated population of 3.5 million, 52 resettlement colonies with a population of 2 million and 216 urban villages with an estimated population of 0.6 million. Thus, in 1999, more than 10.3 million people — 78% of the city's population — were living in sub-standard settlements. In 2001, this dropped marginally to 76%. It is this population that is worst hit as far as water supply is concerned.

East Delhi district is home to one-third of the city's population. This district has the highest concentration of multi-storeyed

| Inequitable water distribution in Delhi | | |
|---|------------------------|--------------------------------|
| S N | Area | Average water available (lpcd) |
| 1 | Mahrauli | 29 |
| 2 | Narela | 31 |
| 3 | Karala-Kanjhawala | 32 |
| 4 | Najafgarh/Dwarka | 74 |
| 5 | Vasant Kunj | 74 |
| 6 | Shahdara | 130 |
| 7 | New and South Delhi | 148 |
| 8 | West Delhi | 202 |
| 9 | Civil Lines and Rohini | 214 |
| 10 | Old city | 277 |
| 11 | Karol Bagh | 337 |
| 12 | NDMC area | 462 |
| 13 | Delhi cantonment | 509 |

Source: Delhi Fact Sheet (2000). NCR Planning Board

housing complexes in Delhi. Consequently, those who can afford it have installed high-powered booster pumps directly on the main transportation water lines, for personal use. The government has done virtually nothing to rectify this uneven distribution or check malpractice.

The problem in Delhi is not related to inequitable distribution alone: according to official sources, about 40% of the total water supplied in Delhi is put to wasteful use. Most important among these is water usage in industrial units: there are hardly any existing or operational mechanisms for the recovery of secondary and tertiary water, so, once water becomes industrial waste it is put out of use permanently.

There are a number of wasteful household activities too, such as washing cars, bathing dogs, etc. The upkeep and maintenance of civic water taps is pathetic practically throughout the city, resulting in substantial water loss.

The solution is not to augment water, as is being advocated by politicians, but to manage and conserve it better by increasing awareness and involving society in public-private partnerships. For example, although the per capita availability of water in the city of Copenhagen (Denmark) is 200 lpcd, the city council has fixed a target of reducing it to 110 lpcd through better management of water utilisation.

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Beg, buy or steal: Scrounging for water in Delhi

In Harijan Basti near Vasant Kunj, Delhi, Simla Devi pays Rs 20 per day for water siphoned off from Delhi Jal Board tankers. Roop Devi from Navjeevan Camp in Govindpur says those who can't afford to buy water secretly fill it up from Bhoomi Camp late at night

SUNETRA LALA

WHO NEEDS WATER AND WHO GETS THE WATER? A survey conducted by Sajha Manch, in 1998, in 15 sub-standard settlements across Delhi revealed that residents were receiving only 90 litres of water per person per day. Another study by the Hazards Centre in Delhi, of 3,000 DDA flats residents, showed that they got 110 litres per person per day. But in areas like Defence Colony, Greater Kailash, Delhi cantonment and Golf Links, the daily supply is around 450 litres per person per day. The Trans-Yamuna region, with 25% of Delhi's population, gets only 2% of the total water supply in Delhi. Out of 593 unauthorised colonies, only 316 are covered with supply lines. Public taps provide about 15-18 litres of water per person in the jhuggi-jhopdi (JJ) colonies. Two-thirds of the city's population, according to the Hazards Centre, receives less than 37 litres of water every day.

Let's look at some standard scenarios in Delhi: the area around a newish middle class residential area, Vasant Kunj, and the slums that exist on its fringes.

Harijan Basti, Kusumpur Gaon, near Vasant Kunj

There are around 200 families living in this colony: 85% of them are dalits. Two taps have been installed in the colony, but the

Triveni Devi, who lives in a colony of 500 families, says the government had installed 10 taps here; two years ago they needed fixing but they got no help from the government. For a year, the residents got water from Kalkaji E Block, paying as much as Rs 2 for 15 litres of water

supply from them is very erratic. Residents complain that at times they can't even collect one bucket of water in 10 days, despite queuing up for hours. The taps were installed about 15 years ago.

Resident **Simla Devi**, with a family of 10, says they have to buy seven to eight drums (one drum = 40 litres) each day from the Delhi Jal Board (DJB) tankers stationed at Vasant Kunj. She walks two kilometres, three times a day, to and from the tankers, carrying 20 litres of water each time. She pays Rs 20 to the tanker drivers for eight drums of water each day. Her husband is unemployed and her sons work as daily labourers.

Pradip Barma, who lives here with his wife and two sons, also buys water from the tankers every day. He claims he and other residents have written several letters to the DJB to fix the existing taps, and have repeatedly asked for two new taps to be installed; they have never heard from the DJB.

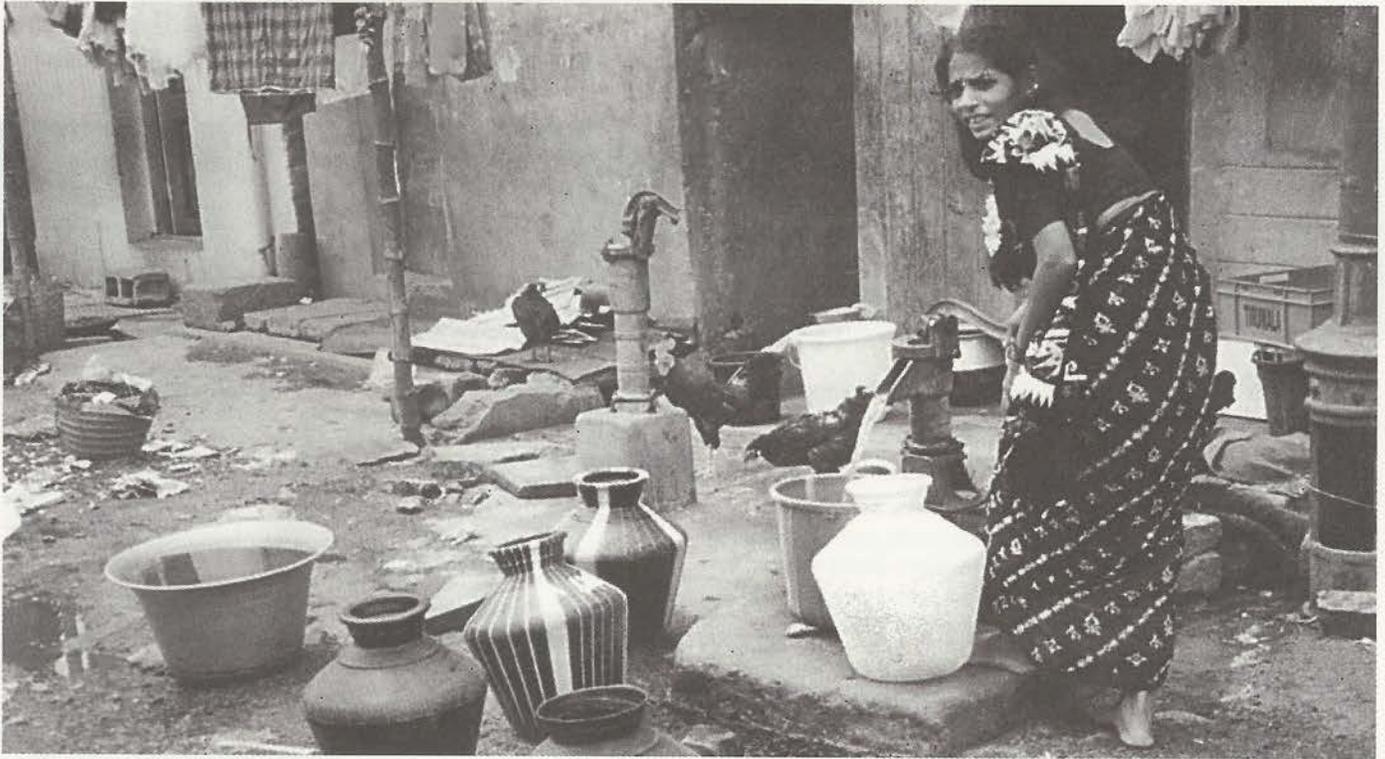
A woman from the colony (who refused to give her name for fear of antagonising the DJB authorities) has had several arguments with the officials concerned, but they refuse to send tankers to Harijan Basti. Though residents buy water from the tanker drivers, if the officials are around they are refused on grounds that the water is meant for the flats in Vasant Kunj.

Since April 2004, they have been paying the official charge of Rs 287 per household every two months. Still they get no water from the taps. When they complained they were told they had to pay their bills whether they got water or not. They say they don't mind paying the water bill as long as they get water. There are no water meters in the colony and the amount of Rs 287 has been arbitrarily fixed by the DJB. About a year-and-a-half ago, officials would at least come to check the water lines (not that the lines got fixed after that); now, they don't bother.

There is a garage in the colony. Every eight to 10 days, they get water from private tankers, paying Rs 100 for each tanker. A mechanic, **Munsi Lal**, says that even though they are expected to get water from the taps from 6-9 am and 3.30-7 pm, the water supply is erratic and often no water comes through. When it does it is not enough to meet the residents' household needs. Lal says that even if the Sonia Vihar plant does become operational, it won't improve the situation because water from the plant would only be directed to flats in better-off colonies.

J J Bandhu Camp, B-5/6 Vasant Kunj

A slum with around 550 houses, roughly 500 metres from



Karen Coelho

Harijan Basti, seems to have no problems with its water supply at present. Residents **M Ramaswamy** and **Umesh Pradhan** say they used to get their water supply from the DDA flats just across the road. The MLA from the area had also put up a 10,000-litre tank in their colony about four years ago. A supply line would draw water from the DDA flats and store it to meet the needs of the colony. But three years ago, residents of the DDA colony complained to the DJB, and the line was cut. Thereafter, 30 houses each got together, pooled in money and installed taps inside the colony at their own expense. They sought government permission for this. The new lines have existed for three years, and the residents have enough water to meet all their needs, even in summer.

Sector C, Vasant Kunj

Residents here don't get any or very little water through the supply lines. Tankers, which charge Rs 100 per 1,000 litres of water, regularly supply water here. This is an almost everyday phenomenon. Residents have installed online motors on the supply pipes, but still the water supply here is erratic.

Navjeevan Camp, B Block, Govindpur

There are many taps in this colony of around 600 houses, but water never comes through them. A tanker supplies water between 6-9 am every day. The residents use their own pipes to collect water from the tanker. This water is used to meet all their needs, except for drinking. The latter is carried from Govindpur, Kalkaji and Giri Nagar. Most residents go to Giri Nagar in the late hours of the night to collect water. They have complained to the MLA on several occasions but they've been told that residents of Navjeevan Camp Block A have installed

online motors on their supply lines, and they can't do anything about it.

Mahendra Singh, who makes and sells mats, says he pays Rs 100 per month for 70 litres of water per day to a resident of Giri Nagar. He has two 35-litre drums, which he fills from Giri Nagar every day.

Roop Devi has been living in the colony for 20 years with her husband and two sons. She says those who can't afford to buy water wait until late at night to secretly fill water from Bhoomi Camp.

Mootni Devi says they have often complained to the MLA, but once elected, MLAs never visit the colonies again.

Sudhaar Camp, Kalkaji

Triveni Devi, who lives in this colony of 500 families, says the government had installed 10 taps here; two years ago they needed fixing but they got no help from the government. For a year, the residents got water from Kalkaji E Block, paying as much as Rs 2 for 15 litres of water. They then sought government permission, fixed the existing taps, and set up new ones. There are no fixed hours for water supply, and during peak summer they often have to stay awake until late at night for water. There are no water meters in the colony and they've never had to pay a water bill. But Triveni says they would be willing to pay Rs 50 per month for a more regular supply.

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The price the poor pay in Mumbai

Daily wage-earners pay up to 20% of their wages on water; slum-dwellers pay Rs 5 per can of water; others tap into water lines illegally, or pay the local mafia for the supply... These are stories that illustrate the political economy of water that operates in the slums of Mumbai

A REPORT BY SPARC, 'Our Needs, Our Priorities: Men and Women from the Slums of Mumbai and Pune Talk About Their Needs for Water and Sanitation' (done in 2002-2003) by Meera Bapat and Indu Agarwal, points out how stressful and time-consuming the exercise of accessing water is for half of Mumbai's population — those who live in slums and on the city's pavements. Slum- and pavement-dwellers spend nearly 10-13% of their income on water. In most cases it is either the "private" water mafia that benefits or local civic officials.

- **Sagira**, who has lived on the pavement near JJ Hospital since 1972, said that she and the other women get up and go in search of water as early as 3.30 am. They try to fill water from the JJ morgue or collect it in the various lanes, failing which they buy it at Rs 5 per *handi*. (The requirement for cooking alone is some four or five *handis* per day.) In a recent election, she and others made water a priority issue and said they would vote for whoever gave them a water connection. The Shiv Sena gave them two taps before the elections; a charge of Rs 1,500 was levied for those who wanted individual taps. Sagira got one too. Now they have water. "These are unofficial taps," she says. "We cannot get taps officially. We have filled in forms so many times but the municipality throws them away. There is no provision for giving water taps to pavement-dwellers."

- **Susheila Laxman Naidu** has lived in the Ramabainagar slum for 24 years: "Until four years ago, water was a big problem. We used to go looking for a leaking pipe. It was not one or two people, but hundreds of us. Occasionally, I used to buy water when I needed it badly. I used to go to some of the houses around and say, 'Take one or two rupees, let me fill some water'. I used to work in a house in Ghatkopar. I used to bring drinking water from there in an autorickshaw. Four years ago, people paid to have water taps installed. I do not have the capacity to pay for a tap. I pay Rs 50 a month to fill 10-15 small pots — four buckets (per day)."

- **Surekha Dilip Yadav** has been living in Ambedkarnagar, near Vikhroli Park, a large settlement on a hilltop, for more than 12 years. "Water has always been a problem here," she says. "The pressure is so low that we have had to make a hollow around the water pipe in the road just outside our houses. We fill up water by putting a pot in this hollow under the hole made in the pipe. Ten people fill water at one hole in the pipe. Because we have had to make holes in the water line to access water, insects get into the pipe; mud and dirt go in it too. There are no fixed timings at which water is supplied; it can come any

time in the 24 hours of a day. We can go out only after we have filled all the water that we can get."

- **Rehmat Bi** of Kamla Rehman Nagar says: "I do not have a water tap in my house and neither do any of my neighbours in the lane. We pay those who have taps in the lane behind ours Rs 125 a month and take water. We have applied to the councillor, even to the housing minister in the past, to give us public taps, but we did not get the taps. The minister sanctioned money from his fund to give water connections, but only the families that are close to him got water taps. Even now, those who have money can pay for the water connection.

- Slum demolitions cause further water hardships. **Hemalata Kailash Ardho** used to live in Tatanagar near Govandi station in Mumbai, where she bought a hut for Rs 5,000 in 1982. There was a municipal tap about 15-20 minutes' walk away. When that stopped working they went to Govandi station, 10 minutes away. "Then one day, they came with bulldozers and flattened our houses and everything inside. There was no time to take anything away. It was a black day for us. I now live on plot number 138 in the transit camp at Mankhurd. The municipality told us that we would not get a water connection because it was a transit camp. But we had to have water — there are 900 families staying here. Finally, we took the connection from a building in the neighbourhood and brought water here. But because this is such a long pipeline, the water pressure is very low towards the end of the line. So we buy water from outsiders at Rs 5-6 a can. They get water free from somewhere and sell it to us. One person carries six or seven cans on a bicycle. On days when there is no tap water, they jack up the price to Rs 9-10."

- Nearly 100,000 families live in slums on Bombay Port Trust (BPT) land. These slums have existed for more than 50 years but the BPT has not provided any facilities, nor does it allow the local authority to provide water and sanitation facilities. **Jyotimani** and **Arogya Das**, who live there, say: "We have to pay Rs 200 per month for water. This is a fire brigade water line that serves the BPT, not a municipal line. So there is water supply the whole time. But it is controlled by local thugs who have fitted motors onto the pipe. If we challenge them, they stop the water supply. Then there is no water. We have to cooperate with them. If we complain to the councillor of the area, he says that he is unable to do anything since we are living illegally on land belonging to the BPT."

The political economy of public sector water utilities reform

Water reform is a Trojan horse utilised by governments, commercial interests and international aid agencies, to turn public resources into profitable enterprises. Today's water wars are sited in cities, not agrarian basins. They are being fought over the control of municipal water systems and services. This article looks at the political economy of public sector water utilities reform in Chennai

KAREN COELHO

REFORM. The blandly benign word operates as a Trojan horse, smuggling in an aggressive politics in which global commercial interests, international aid agencies, and national governments conspire to transform public resources into profitable enterprises. In the water sector, these politics have already assumed the contours of war. Wars over water have been recorded since the beginning of human history, usually dealing with riparian rights across political boundaries or intra-basin struggles over irrigation flows. Such struggles have by no means disappeared. But the new wars that are taking shape, and promising to intensify over the coming decades, are distinct in that they are sited in cities rather than agrarian basins. Their flashpoint has shifted to what is known in the jargon of the water industry as "service management," the issue of who provides, controls, and manages water supply, treatment and distribution. Contemporary water wars are, thus, fought over institutional issues of ownership and control over municipal water systems, terms of contract, channels of finance and issues of sovereignty, all of these in turn carrying powerful repercussions for ordinary people in terms of their access to drinking water. These wars also, in the manner of modern warfare, involve struggles to control "the hearts and minds of people" by invoking moral discourses, deploying theoretical frameworks, and marshalling data and studies that have, by now, accumulated into independent bodies of literature. Thus, one key aspect of these wars, as Vandana Shiva puts it, is the "paradigm war" — a conflict over how water is perceived, valued and treated. "The culture of commodification is at war with diverse cultures of sharing, of receiving and giving water as a free gift."

Champions of privatisation conceive of water as an economic good that must be priced in market terms, not only to maintain the financial viability of water utilities, but to reflect the "real" value of water and to promote equity and resource sustainability. Opponents of privatisation conceive of water as a human right that cannot be privately owned or controlled and whose access must not depend on the ability to pay.

Joining hands with the World Bank and the Asian Development Bank (ADB) in promoting privatisation are bilateral aid agencies, several national governments, financial and bureaucratic elites within countries, and some policy think-tanks and NGOs.

The water wars are not only paradigm wars: they also involve arms, military might and bloodshed, as occurred in Cochabamba, Bolivia, in 1999, and in Soweto, South Africa, in

2002, when state machineries were deployed on behalf of companies against masses of protestors demonstrating against privatisation of their water services.

Neo-liberal prescriptions for public sector utility reform: The case of Chennai's Metrowater

Current reforms of public sector water utilities must be seen against this background. The vast majority of these reforms follow a standard prescription, in line with the orthodoxies laid out in the World Bank's influential publication *Infrastructure for Development* (World Development Report 1994). This report marshals evidence of the failure of state-run utilities across the Third World to make a case for a package of reforms designed to prepare utilities for eventual privatisation (Box 1 outlines the various steps through which privatisation typically occurs). The report ascribes these failures to the "inherent" conditions of government functioning, including political compulsions to favour capital investments that result in immense under-utilised capacity; overstaffing, corruption and inability to charge tariffs that reflect the true value of the resource and the costs incurred. The report identifies three major *principles* that must guide any solution: 1) Corporatisation, designed to insulate public entities from "non-commercial pressures and constraints". 2) Unbundling and privatisation of components of the service. 3) A pricing strategy aimed at full cost recovery.

While the Chennai Metropolitan Water Supply and Sanitation Board (CMWSSB, popularly known as Metrowater) was an early reformer in India, by the late-1990s these thrusts had become part of the national discourse of reform in the water sector. The Eighth Five-Year Plan (1992-97) of the Government of India outlined a key principle for the sector: water being managed as a commodity and not a free service. The National Water Policy of 2002 favours widespread private sector participation in the country's water management. The privatisation agenda is promoted by a subtle conflating of the private sector with "community" and "civil society", all of these shown in opposition to "the state". This strategy was evident, for example, in the prime minister's speech at the Fifth Meeting of the National Water Resources Council in 2002, in which he promoted the revised National Water Policy:

"The policy should...recognise that the community is the rightful custodian of water. Exclusive control by the government machinery, and the resultant mindset among the people that water management is the exclusive responsibility of the government, cannot help us to make the paradigm shift to

**Privatisation by any other name...
The incremental path to private sector
control of water**

Privatisation, conceived as the opening of state sector services and operations to private or market entities, can occur through a range of forms, representing a progressive degree of state withdrawal from direct provisioning roles. *Service contracts* involve short-term arrangements whereby private firms provide specific services such as meter reading or bill preparation; these contracts involve no investment from or financial risks for the private company. *Lease or management contracts* are also usually short-term agreements — often for three to five years — in which the private company either leases a facility such as a sewage pumping station from the civic authority and runs it, or is contracted by the authority to operate and maintain the facility. Ownership remains public, performance is often directly supervised and monitored by civic officials, and the private company is not responsible for new investments or expansion. Contracts of this type, as shown above, now cover increasing sectors of the water and sanitation service in major cities such as Chennai.

BOT (Build-Operate-Transfer), *BOOT* (Build-Own-Operate Transfer) or *DBOT* (Design-Build-Operate-Transfer) contracts are those in which the private company builds some component of the infrastructure, eg a treatment plant, and then runs it for an initial period before transferring ownership to the state or to another buyer. The latter two categories often involve long-term agreements of 20-30 years, with substantial private investment in the project, often backed by purchase agreements that guarantee a minimum demand.

Concession contracts are long-term contracts of 20-30 years, in which the private company takes over all responsibility for running a system, including expansion, recovering its investments through payments from users.

And finally, *divestiture* is a form of privatisation in which the government sells its equity in a utility that is then bought off by a private company (this typology is partly based on Dharmadhikary 2002).

In practice, privatisation tends to occur in a progressive manner along the continuum described above, with service and management contracts preparing the grounds and achieving the “commercialisation” of operations required to attract firms to bid for concession contracts or direct purchases down the road.

participative, essentially local management of water resources...Wherever feasible, public-private partnerships should be encouraged in such a manner that we can attract private investment in the development and management of water resources.”

Such a conflation flattens the vastly unequal field of non-state actors, and produces a concept of “stakeholders” in which multinational corporations are attributed stakes alongside people whose lives and livelihoods depend on low-cost or free

access to water.

In Metrowater, the process of commodifying water has been in operation since the early-1980s when the newly-formed board negotiated its first big loan from the World Bank. Although outright privatisation is not yet publicly on the cards in Chennai, the trajectory of reforms was clear to at least one senior official in the agency, who predicted:

“Slowly [the agency] will be privatised. Mainly in the form of small contracts. They are not yet talking about it, but already so much has been privatised. Our lower levels [of staff] are not aware, have not understood the transformations that are coming within Metrowater.”

Meanwhile, the water service in Chennai is being transformed through two major processes of reform. First, financial and management disciplines modelled on commercial organisations have been prioritised as the core of “institutional strengthening”. As a senior official of the organisation described it: “Commercialising the organisation has been very much on stream for more than ten years now: Metrowater has been functioning not like a government department but like a company for a while now!” This process has included vigorous streamlining and cost-cutting in all operations, massive contraction of staff through a freeze on hires and active promotion of voluntary retirement schemes (VRS) particularly among labour cadres, and the unbundling of services into “cost centres” and “profit centres” to facilitate more stringent audits. All this has resulted in a financially strong organisation: by 2001, Metrowater reported a surplus on its revenue account and had been operating without state government grants for over six years.

The second thrust is the creation of consumers from citizens, involving tariff reform and a thrust on full cost recovery from users. The meanings of a “good service” are increasingly associated with this thrust. Agency documents as early as 1978 recommended that, “eventually the total capital and operating costs of the water and sewerage system have to be borne by the consumer through the tariff”. This principle was subjected to a stinging critique by a senior executive of an infrastructure financing institution in Chennai, as posing an unfair burden on the current generation of water users: “Since the benefits are not accruing only to the current users of the system, it is unfair to bill them in the way the [World] Bank and others are doing now. It is now fashionable to say that users have to pay. But this is nonsense! It’s an orthodoxy, and a nonsense orthodoxy! Theoretically, there is no case in economics — even a first year economics student will tell you that when there are externalities, you cannot price the entire thing on to the consumer.”

This “nonsense orthodoxy” of “moving towards full-cost pricing of water services”, however, is one of the five key actions that the World Water Vision (a document of the World Water Council [WWC]) identifies as necessary to achieve sustainable access for all people to safe and sufficient water. The highly subsidised provision of water that has hitherto been the norm

must indeed be re-examined in the light of the increasing pressure on water resources, especially since such subsidies tend to benefit wealthier people with access to piped water and storage facilities rather than the poor who rely on mobile sources often involving private providers. However, in the vast majority of cases, tariff reform occurs in preparation for, or as a concomitant of, privatisation, and/or as part of donor-imposed reform conditionalities.

At the crux of the debate is the meaning of the term "costs". While full cost-recovery is widely understood as the recuperation of the financial costs of treating and supplying water, the more radical long-term goal of reformers is to reach the full "economic costs" of water. In this system, water will be valued according to its opportunity costs, which in turn will reflect its highest value across the spectrum of water use. In other words, the cost of drinking water to the average consumer would reflect the price that industrialists would be willing to pay for it. Global water scarcity is used to make the case for economic pricing of water in economic terms, and conversely, economic pricing is promoted as a means of reducing water consumption. The vision of a global water policy, as articulated by the WWC, is of the development of "markets of transferable water rights" and the re-allocation of the limited resource to "high value users of water" by "treating water as a tradeable commodity". A World Bank strategy paper foresees that "...in case after case, reformed utilities...(will) push for market-based rules for facilitating the voluntary temporary or permanent transfer of water rights from low-value to high-value users".

The notion of costs also differs radically between private companies and the public sector. Government costs go to provide protected employment with living wages and benefits to large numbers of public sector staff, while private company costs include the salaries of multinational corporate bosses and shareholders' profits.

In Metrowater, pressures to achieve full cost-recovery and tariff reform have translated into punitive effects for clients as well as frontline service-providers. Field officials face sanctions if they fail to achieve ambitious revenue-collection targets; annual performance awards are based on success in meeting these targets; clients are denied service until they meet all arrears, even if they have not received water for several months.

How has this thrust of cost-recovery from users affected services to the slums? Services to slum-dwellers have remained a contentious theme in the World Bank's relationship with Metrowater since the 1980s. A 1986 Bank mission pushed the organisation to re-examine its responsibility for supplying water to the slums, and recommended that the city corporation meet these costs: "The principle of cost-recovery, even if indirectly recovered from the MMC (Madras Municipal Corporation), should be sought from slum-dwellers especially those occupying illegal land since they pay no taxes nor water charges."

In 1989, the World Bank spelled out its opposition to the utility being directly involved in government schemes to provide water

to the poor through unlevied public standpipes, and advised that it disaggregate this section of clients from the revenue-paying public. While the Bank was "not opposed to subsidies *per se*", it objected to the inclusion of these citizens in the mainstream of the state service. The accountability of the state for water provision is thus redefined as a commercial accountability to consumers, and separated from the government's accountability to the poor.

Thus, while water sector reforms are pushed in the name of serving marginal populations, the issue of subsidising costs for poor consumers remains a very equivocal one in international reform orthodoxies. ADB reports virtuously assert that "basic water requirements need to be made affordable to all". However, of the two available instruments through which this can occur, namely cross-subsidy (from wealthier to poorer consumers) or direct government subsidy, the former is strongly discouraged in water reform prescriptions from the World Bank and its partners. "Distortions in tariffs, where one part of a community cross-subsidises another, need to be smoothed out" (ADB 1999). Cross-subsidies are unpopular with private providers that are loathe to penalise their wealthier consumers. As Shripad Dharmadhikary argues: "[T]he logic of the private suppliers is that bulk (and important) consumers are charged *less*, not more." The pressure on public utilities to eliminate cross-subsidies then may be seen as part of a process of preparing utilities for private markets. The second option, of direct, targeted and transparent subsidies for the poor, demands that governments cover the costs of private provision to poor consumers, at profit-making rates for the private company. Many governments have declared themselves unable

The water service in Chennai is being transformed through two major processes of reform. First, financial and management disciplines. Second, the creation of consumers from citizens, involving tariff reform and a thrust on full cost recovery from users

to meet these costs, leaving the poor to pay or be cut off: this has happened in Ghana, Bolivia, Manila and other instances.

By the late-1990s, Metrowater had adopted a policy of gradually eliminating public standpipes (handpumps), although the policy was never publicly announced. A senior engineer told me: "There has been a decision to not provide public standpipes in new areas that are being served, that is, where the service is being extended. This was a decision taken internally by Metrowater in 1996 or so, because of the problems in maintaining these standpipes, and also because the Board has turned towards revenue-generation as the focus."

Meanwhile, the slums remain woefully underserved. If the average allocation of water in a normal Chennai season is about 70 litres per capita daily (lpcd), itself way below the norm (India's National Commission on Urbanisation sets the norm as 135 litres per capita daily), slum-dwellers get about 25 litres through public standpipes, lorries and tankers. Piped water through pumps is usually free; in many cases, however, it falls under the control of politically powerful local leaders.

Meanwhile, the more expensive and wasteful options of lorry and tanker supply to slums remains alive as a lucrative source of revenue for local party workers. When Metrowater engineers attempt to reduce tanker supply in good seasons, due to good flows in the pipe system, they encounter substantial opposition, especially from the ruling party workers. As Susheela Gopalakrishan, a city councillor, remarks: "No permanent solution [to the water problem in slums] is allowed because party workers earn money from lorries." A Metrowater field engineer explained to me how the allocation of tankers worked in the political field: "The party secretary looks at his list of party workers and finds ten people without jobs, so he demands from us: 'Give us ten tankers!' If I say there are already tanks there, he says: 'Those are for the previous government — now OUR men need to earn. Or you get rid of those fellows and put ours in.' Nowadays I find that some tankers are shared between two parties — alternate day control! They have tendered out shares!"

Magic and mythologies of supply-side solutions

While the WB and ADB promote "demand management"

Pitfalls of privatisation

Experiences with dominant models of privatisation emerging in different parts of the world over the past decade show that they pose serious threats to popular sovereignty, not only in terms of national and local decision-making but in terms of the continued access of people to basic life resources.

- 1 The primary justification for privatisation, that it makes private funds available for infrastructure investment in cash-strapped countries, has proved false. Corporations introduce very small proportions of equity into their investments, increasingly relying on debt financing and recovering the interest on their loans through user charges. The past few years have seen a pronounced decline in private equity investment, from a peak of US\$ 50 billion in 1997 to \$ 7 billion in 2002. As major companies decline to risk their investments in Third World countries, international funding institutions (IFIs) increasingly channel their infrastructure assistance loans to these countries via private companies.
- 2 In addition, governments offer extraordinary sops to private corporations to attract their investments: these include assured rates of return (usually indexed to the dollar), government guarantees on loans, take-or-pay clauses (which assure them a minimum volume of demand or monetary compensation for the shortfall), and escrow accounts.
- 3 In a large number of cases, the private company asserts and seeks to expand monopolistic control over local water resources, extending the "natural monopoly" of the piped network to claim control even over alternative sources in the area.
- 4 The new arrangements have almost invariably brought tariff hikes of many orders of magnitude. In Ghana, water rates more than doubled in 2001 and 2002 as the government prepared to privatise the system. Companies display far less hesitation in disconnecting customers for non-payment of tariff than do governments: in Manila, Buenos Aires, Nespruit, and even in Ghana (under World Bank and IMF pressure), nearly a third of the customers were cut off from the system when they could not meet the new tariffs. Automatic tariff-adjustment formulae, commonly negotiated by private companies, allow rates to rise automatically to offset inflation, and more disastrously, index tariffs to the dollar to allow companies to repatriate profits and repay foreign debt. This clause subjects consumers to price rises every time the domestic currency depreciates, in addition to the price rises from tariff hikes, amounting to what a community health activist in Ghana called a "deadly poison and a prescription for death for the poor" (Patrick Apoya, quoted in Public Citizen 2002).
- 5 The structure of liability of multinational corporations and their size carry serious implications for their accountability to people and to governments, as seen in cases where companies have broken their contracts and left, often as a result of public protests against their services. The companies have then proceeded to sue the governments for millions of dollars.
- 6 Transparency is severely compromised in most of these agreements. Contract negotiations occur behind closed doors, decisions are taken with no input from users, and most contract documents remain confidential, violating citizens' rights to information. Recent and close to home, Delhi's water system privatisation has been found to be manipulated by the World Bank's clandestine interventions in setting the terms of reference for contracts, and eligibility and selection criteria for bidders, to favour PricewaterhouseCoopers' bid.

through tariff reform, state politicians struggle to outdo each other in grandiose posturing as the saviours of the water-starved metropolis of Chennai, through initiating massive transfer schemes. Supply-side solutions, especially in the form of capital-intensive hardware projects, are favoured by a cross-section of powerful interests — politicians, senior bureaucrats and the engineering and construction firms they patronise, engineers and managers of the water utility who gain money and prestige from handling big projects, and the urban elite who can continue to behave as if supply was endless. Not surprisingly, the costs and pitfalls of these projects are glossed over or minimised. The Telugu Ganga Project, commissioned in 1996, was envisaged to bring 12 tmcft (thousand million cubic feet, about 930 million litres a day [mld]) of Krishna water to the city from the Kandaleru reservoir, over a distance of 152 km. However, it has never, since 1996, delivered more than about 1 or 2 tmcft a year. This is largely because it passes through the perennially drought-prone Rayalaseema district, whose farmers were never consulted, and who continue to tap into its canals for their irrigation needs.

Despite its failure to materialise, Krishna water formed the basis for more massive investments. Between 1996 and 2002, Metrowater spent close to Rs 1,000 crore, under the World Bank-assisted Second Chennai Project, to expand and improve the city's pipe network to carry the additional 930 mld of Krishna water expected. In 2002, most of the newly built water distribution stations (WDSs) built under the project were not functioning as there was no water in the system. A retired bureaucrat analysed this project as a deliberate eyewash: "They (in Metrowater) don't want to solve the problem — it is all a fraud. I have worked out the mechanism very clearly, it is simple! The big guys go for the bulk money from big projects, and when these fail, they still make money! Because you can make a lot of money from scarcity and distress. They cheat the funding agencies, and then when they have to repay them it is the taxpayers who pay. And then to keep the lower levels (of the bureaucracy) happy, you still have most years as distress years! This is their source of money. If people get adequate water, will they pay? Even the mineral water people — their business is distress. It is only because of Metrowater's failure that they are growing! This is a win-win situation for the corrupt and rotten!"

As Lewis Menezes (formerly special officer to the corporation of Chennai) writes: "Thanks to the false promises of politicians and bureaucrats and the colossal apathy of Chennai's citizens, we have criminally neglected all proximate solutions which are within our capacities and within our means." Ramaswamy Iyer, a long-time water expert, writes: "The approach common in the case of other consumer or industrial goods, of projecting demand and providing the supply through production, is inappropriate in the case of water. Here we need to start from the recognition of finite availability and learn to live with it...The answer does not necessarily lie in large, centralised, top-down, technologically-driven projects: local, de-centred, people-centred alternatives are available...These are instances not merely of water management but of social mobilisation and transformation."

Meanwhile, solutions become increasingly more desperate and unsustainable. From long-distance transfers, the next option is groundwater mining. The New Veeranam Project was built to convey 180 mld of Cauvery water to Chennai from the Veeranam lake in Cuddalore district, through a 230-km pipeline at a capital cost of over Rs 700 crore. Now, fearing that the Veeranam lake may dry out in deficit rainfall years, the government sanctioned another Rs 300 crore for the New Veeranam Extension Project, to extract groundwater from the Kollidam river basin and convey it to the city through the New Veeranam infrastructure. In January 2005, villagers from the catchment areas staged a fast in protest against the proposed depletion of their water resources and the threat to their livelihoods. This practice, of sucking resources out of rural hinterlands to cater to the ever-expanding urban appetite, is now a globally recommended policy breakthrough, facilitated by the institution of "modern water rights", which create markets in groundwater and permit individuals to profit from selling water commercially.

Chennai's Metrowater, entrusted with protecting the region's groundwater resources, has emerged as the greatest culprit in depleting the aquifers of river basins near the city through highly unsustainable extraction over the past ten years. Emerging proposals to introduce tradeable water rights in these areas implicitly allow and encourage the continuing dependence on groundwater extraction as the solution to the problem of supplying the city. They would allow the organisation to continue these practices under a legal, ostensibly more controlled regime, and exonerate the utility of its responsibility to explore other, more sustainable long-term options such as treating and recycling waste water, harvesting water through regeneration of tanks and lakes, promoting re-use and conservation, and others.

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Stealing farmers' water to quench Chennai's big thirst

A Rs 600-crore tanker industry is capitalising on Chennai's acute water scarcity. Over 13,000 tankers are mining the surrounding farmlands for water. With agriculture in crisis and groundwater levels insufficient for farming, farmers find it easier to live off the money they earn from private water operators

R SRINIVASAN

SEVERE WATER SHORTAGES are routine in Chennai every summer. The average person knows she's got to sweat it out in the baking sun, waiting in an endless queue for water.

This year the rains have cheated them again. Although the water rushing in from upper riparian states like Karnataka and Maharashtra has brought temporary relief, nobody believes the problem will ever be solved.

The Tamil Nadu government has no answer; it is busy 'stealing' water from its farmers to quench the thirst of Chennai's population.

Water shortages are met by lifting water from neighbouring rural areas. Every month, an average of Rs 50 crores' worth of water is brought into Chennai from the rural provinces. That amounts to a whopping Rs 600 crore, every year, for water.

Chennai Metrowater says the Upper Veeranam Project, meant to bring drinking water to Chennai, will result in savings of Rs 500 crore every year. Right now, however, water continues to be 'stolen' from rural areas around Chennai, destroying valuable farmland and creating a shortage in Veeranam itself. Nobody likes to talk about this.

"Government lorries have stopped plying water from the villages to the cities, but private lorries continue to do so," says a Metrowater Board official. "We can fulfil only one-fourth of the needs of Chennai, the rest is met by private operators."

According to the World Health Organisation (WHO), on average a person needs 3 litres of water for drinking, 4 litres for cooking, 20 litres for bathing, 40 litres for sanitation, 25 litres to wash vessels and 23 litres for gardening. Chennai currently has a population of 50 lakh — that means its total water requirement for the year is approximately 675 million litres.

'Managing Water in Chennai', a report brought out by the Centre for Science and Environment, predicts that by the year 2021, Chennai's population will rise to 1 crore, and its water requirement will increase to 1,170 million litres annually. Of this, around 870 million litres will be required to meet residential needs; the rest will be for industrial purposes.

In 2004, the various sources of water supply to Chennai included:

- Tanks and borewells operated by Chennai Metrowater: 120 million litres
- Water recycling units: 3 million litres

- Government and municipality wells: 15 million litres
- Housing board wells/borewells: 400 million litres
- Private water tankers: 50 million litres
- Canal/sewage water recycling: 50 million litres
- Veeranam Project: 40 million litres supplied through taps

Source: Chennai Metrowater

As Chennai (total area: 200 sq km) grows into yet another Asian megacity, it is busy drawing water from sources all around it. The water is being drawn from nearby towns like Mamandur, Palur, Karungizhi, Tiruporur, Puvirundavalli, Meenjur, Gummidipundi and Kanaigiper, using a fleet of over 13,000 water tankers. Private lorries collect water from farms and villages around Chennai; borewells are the main source.

This is water taken away not just from agriculture but also from the drinking water supplies of the villagers. Groundwater levels have dropped drastically in all these towns and villages as a result. A policy of enforcing compulsory rainwater harvesting, initiated by the Tamil Nadu government a few years ago, has made very little difference to the water situation in these rural areas. Even villages that do practise water conservation methods are facing a severe water crisis. Disputes over water are common.

"In our village, as per government instructions, we carried out rainwater harvesting with the help of district officials; we recovered lakes occupied by various vested interests. We deepened the lakes and de-silted them. But all these efforts have benefited only the private water suppliers," says Neelavathi Venkatesan, president of the Vangaivasal village panchayat.

He says there were already two packaged water companies operating in his area. Now another has been given permission to set up shop. Apart from them, private lorries have also been regularly taking water from the lakes and wells in the village, to sell in Chennai.

In 1987, Venkatesan says, the Tamil Nadu government brought in a special Act to prevent instances of water theft from public sources. But, according to him, even if the culprits are caught and handed over to the police they are let off with a light fine.

"We have carried out many agitations against these operators, but they are of little use. Now we have a water problem in our village," says Venkatesan.

In Tiruvallur district, north of Chennai, groundwater along a stretch of around 13 km has been made unusable by the seepage of seawater inland by as much as 4 km.

"The government lorries may have stopped taking water to supply the residents of Chennai, but the situation here has not changed much. Every month the water dealers pay farmers an advance of Rs 50,000 plus Rs 15,000 for the rights to exploit water sources on their land. The water is pumped out using subsidised power provided by the government for agricultural purposes," says Samuel Dharanipathy, vice-president of the Vengaivasal Ayacut Organisation (ayacuts are channels used to divide irrigation water among farmers; the organisation oversees this process to prevent disputes).

Dharanipathy says diesel engines are being used to draw out the water. Seven wells in his village are being exploited in this manner; most of them, around 30 feet deep, have already dried up. A perennial 110-acre lake in the village has also gone dry.

"This year we de-silted the lake and there is some water now but we are not sure if it will be enough for our cattle," he adds.

It's a similar story along the East Coast Road (ECR) that runs south of Chennai down the entire coast of Tamil Nadu. Here, because of the proximity to the sea, much of the groundwater has been contaminated by saltwater.

The private water operators are siphoning off whatever

drinkable water is left in the villages, sparking off several agitations by local people. But little has been achieved. The indiscriminate pumping of water is further contaminating water sources.

In Selaiyur, villagers have to bear the consequences of the destruction of water sources both by local vested interests as well as private water operators. The Selaiyur lake (around 90 acres in size) that was being used to irrigate around 500 acres of farmland, and is also the source of drinking water, has almost been taken over by local bigwigs.

Although the villagers have been protesting the illegal takeover of the lake (they have even taken the matter to court), they have received no help from the government. Meanwhile, private water tankers continue to lift water from the lake.

"We don't stop anyone from taking water to solve Chennai's problems. But existing water sources should be protected and the requirements of the rural people should be safeguarded," says C Loganathan, head of the Selaiyur farmers organisation.

In their defence, the private water dealers say they are not exploiting anyone, they are only meeting Chennai's demand for water. "We serve the people. The government is not able to give water to everybody so we supply those who are willing to pay. We don't pressurise anyone to buy from us. The state-owned Metrowater also charges money for water — so why is it a



Karen Coelho

Delhi's water mafia does brisk business

A Rs 400-crore water tanker industry thrives in the capital. The water mafia also connives to re-package Delhi Jal Board water and sell it privately

About 1,400 water tankers supply water in Delhi. Half of these are privately controlled, conniving with the local authorities to flout rules and pilfer water. To control this, the Delhi Jal Board (DJB) recently announced that it would start monitoring the movement of its tankers via satellite. So far it's failed to check the theft.

Perennial water crises in summer and the DJB's failure to satisfy its consumers has spawned a water mafia in Delhi that does business to the tune of Rs 400 crore, largely from DJB water. Every summer, the demand for water in Delhi shoots up by 4.5 crore litres — this is met by the water mafia that reportedly earns Rs 1.5-Rs 2 crore every day. Private water tankers play a major role, catering to the water needs of South Delhi and rural areas of East and West Delhi. These tankers mine groundwater free of cost and sell it at Rs 1,000-Rs 2,500 per tanker. Though it is clearly written on these tankers 'This water is not potable water' people are forced to drink it. Nothing else is available.

In East Delhi's Jheel, Krishna Nagar and Geeta colonies, a number of units package water in plastic pouches, jugs, bottles and jars. In Rajgarh Colony, Raghuvarpura and Vishwas Nagar, DJB water is being filled in plastic packets under the names 'Hero', 'Barfani' and 'VIP', respectively. In the shops of Gandhi Nagar, Ram Nagar and Ashok Market, water jugs are being supplied at a rate of Rs 10 per litre. Okhla Industrial Area in South Delhi, and Uttam Nagar, Rajouri Garden and Tilak Nagar in West Delhi too have many plants filling water in jugs. Similar plants are openly re-packaging DJB water in jugs and plastic jars in Narela, Bakhtawarpur, Bawana and Najafgarh. In almost all of these cases, DJB water is being used. In a few instances, DJB water is being mixed with groundwater. The DJB is well aware of this and says if people cooperate with them the practice can be curbed.

While the water mafia is minting money from DJB water, the DJB itself closed down its only packaged water-bottling plant at Sadiq Nagar in May 2005. It discovered that the residual alumina content in the water had exceeded the set standards for bottled water. — **Arun Kumar Singh**

crime if we also do so," asks Ganesan, a water dealer.

He adds that by paying farmers for their water they are being given a new lease of life, as the agricultural situation is so bad. "We are giving farmers an income they never expected. We are not exploiting anyone. We have to pay for the maintenance of our lorries, diesel, rentals and many other things apart from providing employment to people," says Ganesan.

K Veera Raghavan, a sharecropper in Vengaivasal, agrees that the farming situation is precarious. "We have to depend on electric pumps to irrigate our fields with the water remaining in our village pond. But there are too many power cuts and

farming is no longer profitable." Veera Raghavan explains that the proximity of his village to Chennai also means that labour costs are high as many villagers migrate to the city in search of better jobs. The government, he says, is indifferent to agriculture, and the cost of private funds to pay for farming inputs is exorbitant.

"I have 3 acres of land, and spend around Rs 7,000 per acre. My entire family works on the farm for six months of the year, at the end of which I get a return of Rs 12,000 per acre. Most of this money goes towards paying interest on loans. My 200 sq ft well, from which I sell water, gives me more income than my farming does," says Veera Raghavan. He spent Rs 5,000 on setting up a new borewell, and Rs 12,000 on a diesel engine. He sells a tanker-load of water for Rs 80, on which he makes a profit of Rs 60. The farmer says his family eats and lives better now.

Veera Raghavan admits, however, that the indiscriminate sale of water could lead to shortages in the future. But he believes there is no other way out for his own survival. "This is god's will," he says, lifting his hands to the sky.

A little investigation in the provinces around Chennai reveals that water is not the only thing being bought by private water operators. They are also buying up land from farmers in distress and debt. Drained of all its water resources, the land is being sold as real estate.

"After selling their land, most farmers move to Chennai in search of work and end up in the city's slums," says Venkatesan of the Tambaram taluka farmers association. The government must do something urgently to prevent the ruin of the state's farming communities, he says.

"We used to have a beautiful life before. Agriculture used to be good enough to look after my entire family. But now there is no water in our wells anymore and we want to sell our land and move to Chennai," says Perumal, a farmer in Payayaseivaram village, Balur taluka, holding back his tears.

Social activists in Chennai say it is possible to solve the city's water problems, provided the government is able to frame the right policies and implement them properly. "The ponds around Chennai's numerous temples need to be revived. This will automatically increase groundwater levels. The swamps around the city should be protected, as they guard against seawater contaminating groundwater sources. Some of these swamps are being used to dump garbage; this should stop immediately," says V Srinivasan, an activist who has worked on projects to revive Chennai's temple ponds. "The state should not convert the neighbouring rural areas into a desert simply to supply water to Chennai," says K Anbararan, a poet and writer based in the city. It is time, he says, that the government stopped looking at everything from the point of view of electoral politics, and did something to solve the real problems of ordinary people.

R Srinivasan is a social activist working on livelihood issues among the urban poor in Chennai. He is currently engaged in rehabilitation work among tsunami-affected populations in coastal areas to the south of the city

Dry village, lush water park

Women in water-starved Bazargaon village in Vidarbha, Maharashtra, walk 15 km a day to fetch water. There is just one public well in this village of 3,000, and that is mostly dry. But the nearby water park, with ice-skating and 18 different kinds of water slides and games, has more water than Bazargaon can dream of

P SAINATH

EVEN WHEN IT'S 47 DEGREES in the rest of the region, it's cool here. A little away from us is a patch that clocks in at minus 13 degrees. This is "India's first Snowdome" — in burning Vidarbha, Maharashtra. Keeping its ice rink firm costs Rs 4,000 a day in electricity charges alone.

Welcome to the Fun and Food Village Water and Amusement Park in Bazargaon gram panchayat of Nagpur (rural) district. A portrait of Mahatma Gandhi greets visitors in the office of the huge complex. And you're assured daily disco, ice-skating, ice-sliding, and "a well-stocked bar with cocktails". The 40-acre park itself offers 18 kinds of water slides and games. Also, services for events ranging from conferences to kitty parties.

The village of Bazargaon itself (population: 3,000) faces a huge water crisis. "Having to make many daily trips for water, women walk up to 15 km in a day to fetch it," says sarpanch Yamunabai Uikey. "This whole village has just one *sarkari* (government) well. Sometimes, we get water once in four or five days. Sometimes, once in ten days."

Bazargaon falls in a region declared scarcity-hit in 2004. It had never faced that fate before. The village also had its share of six-hour — and worse — power cuts till about May. These hit every aspect of daily life, including health, and devastated children appearing for exams. The summer heat, touching 47 degrees Celsius, made things worse.

All these iron laws of rural life do not apply within the Fun and Food Village. This private oasis has more water than Bazargaon can dream of. And never a moment's break in power supply. "We pay on average," says Jasjeet Singh, general manager of the park, "about Rs 400,000 a month in electricity bills."

The park's monthly power bill alone almost equals the yearly revenue of Yamunabai's gram panchayat. Ironically, the village's power crisis eased slightly because of the park. Both share the same sub-station. The park's peak period begins in May. And so things have been a little better since then.

The park's contribution to the gram panchayat's revenue is Rs 50,000 a year: about half of what Fun and Food Village collects at the gate in a day from its 700 daily visitors. Barely a dozen of the park's 110 workers are locals from Bazargaon.

Water-starved Vidarbha has a growing number of such water parks and amusement centres. In Shegaon, Buldhana, a religious trust runs a giant Meditation Centre and Entertainment Park. Efforts to maintain a 30-acre 'artificial lake'

within it ran dry this summer. But not before untold amounts of water were wasted in the attempt. Here, the entry tickets are called "donations". In Yavatmal, a private company runs a public lake as a tourist joint. Amravati has two or more such spots (dry just now). And there are others in and around Nagpur.

This, in a region where villages have sometimes got water once in 15 days. And where an ongoing farm crisis has seen the largest number of farmer suicides in Maharashtra. "No major project for either drinking water or irrigation has been completed in Vidarbha in decades," says Nagpur-based journalist Jaideep Hardikar. He has covered the region for years.

Singh insists the Fun and Food Village conserves water. "We use sophisticated filter plants to re-use the same water." But evaporation levels are very high in this heat. And water is not just used for sports. All the parks use massive amounts of it to maintain their gardens, on sanitation and for their clientele.

"It is a huge waste of water and money," says Vinayak Gaikwad of Buldhana. He is a farmer and a kisan sabha leader in the district. That in the process, public resources are so often used to boost private profit angers Gaikwad. "They should instead be meeting people's basic water needs."

Back in Bazargaon, sarpanch Yamunabai Uikey isn't impressed either. Not by the Fun and Food Village. Nor by other industries that have taken a lot but given very little. "What is there in all this for us," she wants to know. To get a standard government water project for her village the panchayat has to bear 10% of its cost. That's around Rs 450,000. "How can we afford that? What is our condition?" So it's simply been handed over to a contractor. This could see the project built. But it will mean more costs in the long run and less control for a village of so many poor and landless people.

In the park, Gandhi's portrait still smiles out of the office as we leave. Seemingly at the 'Snowdome' across the parking lot. An odd fate for the man who said: "Live simply, that others might simply live."

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Who pays for our giant follies?

In the years following Independence, India's politicians and bureaucrats seemed to have become victims of what Nehru termed the disease of gigantism, building large dams as monuments to themselves. Four thousand large projects later, and despite huge gaps between promises and performance, that tendency continues. How are decisions on large dams taken? Who profits from them and who pays?

HIMANSHU
THAKKAR

"AT THE DAWN OF INDEPENDENCE India relied, wistfully, on her high dam-builders...During this TVA phase of India's economic development, a well-known Indian engineer used to proclaim off and on that he was going to build the highest dam in the world, suggesting implicitly a new yardstick for measuring national greatness — the height of a dam and the millions of cubic yards of concrete poured." So said Sudhir Sen (first chief executive officer of the Damodar Valley Corporation, called India's TVA by many) in *A Richer Harvest: New Horizons for Developing Countries* (Tata McGraw-Hill Publishing Co New Delhi, 1974).

The above quote is remarkable for a number of reasons. It should be noted that Sen belonged to the mainstream official group of people who were at the helm of things during the first decade after Independence in 1947. So this is not coming from somebody outside the system. Secondly, the "well-known Indian engineer" that Sen describes here is Ayodhya Nath Khosla, who can safely be described as the first engineer-in-chief of independent India (of course no such title actually existed). And lastly, the dam referred to in the quote is the most famous icon of India's dam-building history, the Bhakra dam.

This quote, in a nutshell, reflects the reality about the political economy of dam-building in India. The people who took decisions about large dams in the initial years after Independence got away with a whole series of decisions on building large dams, no questions asked. Sen goes on to say about Khosla and company: "That many engineers in India, if left to themselves, like to build monuments to themselves regardless of the time and cost involved is a commonplace of history. India had yet to discover this." These are strong words coming from someone who occupied a very senior position in the scheme of things then.

What this means is that many of the decisions about large dams were not taken on merit, and that the people who took the decisions were not answerable in any real sense of the word. Well-known scientist from West Bengal, Meghnad Saha, said in Parliament in 1954 about A N Khosla, who was the first chairman of the Central Water, Irrigation and Navigation Commission: "The chairman of the CWINC was combining in himself the functions of Brahma, Vishnu and Maheshwar. He drew up the designs, he executed the schemes himself and as secretary he passed the whole thing himself."

But the responsibility for these projects does not rest with

Khosla alone. Politicians, bureaucrats and various other institutions were equally responsible for decisions that led to water resources development being centred around large dams. Then Prime Minister Jawaharlal Nehru himself said on November 17, 1958, while addressing the 29th annual meeting of the Central Board of Irrigation and Power: "For some time past, however, I have been beginning to think that we are suffering from what we may call, disease of gigantism. We want to show that we can build big dams and do big things. This is a dangerous outlook developing in India...The idea of having big undertakings and doing big tasks for the sake of showing that we can do big things is not a good outlook at all." It is another matter that Nehru could do little to reverse these unaccountable decisions.

The trend that was thus established in the 1950s has continued till today, as far as decisions about water resources development are concerned. Nehru's grandson and then Prime Minister Rajiv Gandhi famously said in 1986, while addressing a conference of irrigation ministers: "The situation today is that, since 1951, 246 big surface irrigation projects have been initiated. Only 66 out of these have been completed; 181 are still under construction. Perhaps we can safely say that almost no benefit has come to the people from these projects. For 16 years, we have poured out money. The people have got nothing back, no irrigation, no water, no increase in production, no help in their daily life." Rajiv Gandhi may have been off the mark on some of those numbers, but he was spot-on about the end result. Unfortunately, these brave words did not get translated into any effective action to counter the situation.

The most glaring example in this regard in recent times is the way the riverlinking scheme is being pushed. There are no feasibility reports for a number of proposed links. There has been no proper consultation with the people; even basic information is still to be made available. No details have been given on the cost assessments, benefits, impact, options... And yet, for over three years, the President of India has been advocating the project. This advocacy began with his speech to the nation on August 14, 2002, and was reflected in his address to the nation on August 14, 2005. The Supreme Court of India too has been pushing implementation of the scheme, though it is clearly beyond its mandate.

Ramaswamy Iyer, former secretary, Union Ministry of Water Resources said in *The Hindu*, December 14, 2004: "It is necessary to remind the readers that in a sense the President of

India and the Supreme Court are the originators of the ILR project. Meanwhile, the President continues to commend the project in his speeches on various occasions, and the Government of India is under an obligation to report periodically to the Supreme Court on the status of the project. Those two factors indirectly act as a kind of pressure on the government..."

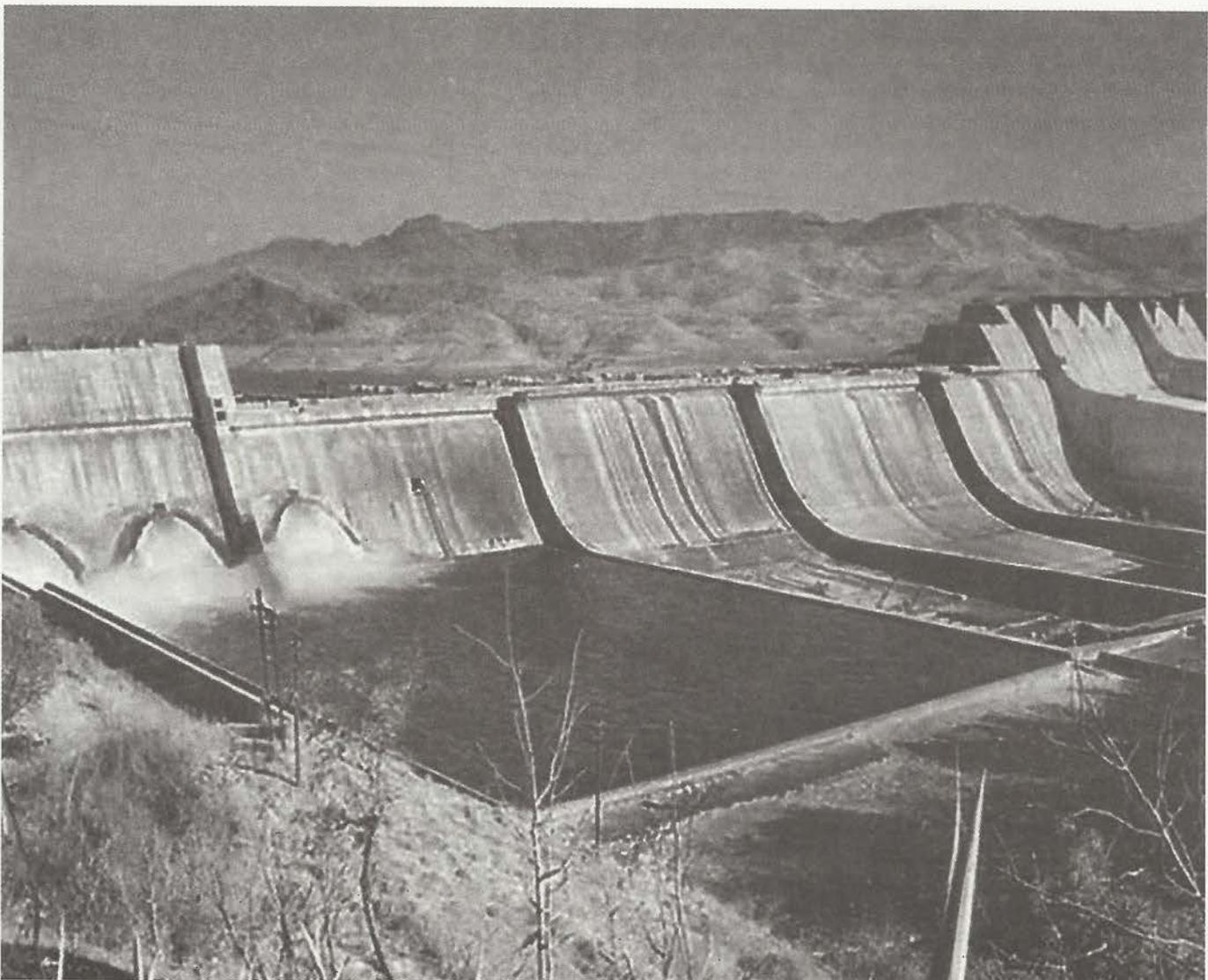
When the National Democratic Alliance (NDA) government was in power, before May 2004, then Prime Minister A B Vajpayee, the deputy prime minister, vice-president and concerned ministers all pushed the project that had yet to pass the first stage of due process in decision-making. With the backing of these high functionaries, will the due process be able to consider the project on merit? The answer is clearly a big 'No'.

When Vajpayee was prime minister he seemed particularly in favour of large dams, as is clear from some of his actions listed below:

- December 13, 1999: The prime minister lays the foundation

stone for the 800 MW Parbati Hydel Power Project (Stage II).

- June 5, 2000 (World Environment Day): The prime minister lays the foundation stone for the 800 MW Kol hydel power dam in Himachal Pradesh.
- March 4, 2001: The prime minister dedicates the Thein dam (Punjab) to the nation.
- 50,000 MW hydropower initiative launched.
- Task force for the riverlinking project set up.
- Closure of tunnels 3 and 4 of the Tehri Dam Project ordered, even as affected people still have to be resettled.
- Support for an increase in the height of the Sardar Sarovar dam, even as affected people still have to be resettled according to legal requirements.
- Support for Indira Sagar Project that would lead to the displacement of over 100,000 people, including those in Harsud town, and submergence of over 100 villages, without



due rehabilitation.

- Formulation of National Resettlement and Rehabilitation Policy that has no legal teeth and is much diluted, compared to the relief and rehabilitation norms of, say, the Sardar Sarovar Project.

All these (and other) actions gave a huge push to the big dams cause. When each of these projects involves hundreds of crores of rupees, in some cases thousands of crores of rupees, one begins to understand the kind of benefits and perks that various arms of the government would reap.

Another actor that has been playing an important role in pushing unjustifiable projects through is the World Bank (WB). The WB may have directly funded only a small fraction of large dams in India, but it has played a significant role in shaping India's policy and programmes on water resources, and pushing for such projects. It has often done so in violation not only of its own policies but of the government's policies as well. For example, when the World Bank signed an agreement to fund the Sardar Sarovar Project in 1985, the Ministry of Environment and Forests (MoEF) still had to clear the project from the environmental point of view and the diversion of forest land. In fact, the agreement signed with the Bank and the dues the Indian government had to start paying for the same, were used to put pressure on the MoEF for clearance, even when the ministry explicitly stated that it was not ready to give clearance. The World Bank agreement was used as a certificate of merit to push through various clearances for the project.

The World Bank similarly pushed the Nathpa Jhakri Hydropower Project in India without full consideration of the costs, benefits and impact of the project. It signed an agreement to fund the project in 1988-89 and the consequences of this are evident today — the project has a time over-run of seven years, and a cost over-run of around 358% over projected costs. Moreover, there are serious problems like flash floods, siltation leading to stoppage of power generation, etc. So much so that the parliamentary standing committee on energy issues, in a report tabled in the Lok Sabha on August 18, 2005, recommended a thorough inquiry into the matter.

The Allain Duhangan Hydropower Project in Himachal Pradesh is another instance where the World Bank (this time, the International Finance Commission [IFC], the Bank's private sector arm) was found guilty of pushing the project through without adhering to its own norms (in fact, based on falsehoods). In October 2003, the IFC declared on its website that the project would go to the World Bank Board on October 31, 2003, and that all the necessary requirements, including an Environmental Impact Assessment (EIA) and public consultations had been completed. When SANDRP (South Asia Network on Dams, Rivers and People) and people from the affected villages exposed this as a lie, the project did not go to the Board. But the Bank seems to have learnt no lessons — it pushed the project through the Board a year later after paying lip service to the people's concerns. It did not even fully complete the EIA.

One fundamental problem is that there is no participatory,

bottom-up decision-making process that can help factor in a sense of openness and involvement of local people in decision-making. Even after completing around 4,000 large projects, there has been no credible, comprehensive assessment of the performance of any large dam project. Both these factors have helped the system continue even in the face of huge gaps between promises and performance.

What is incredible is that the authorities seem to find it difficult to adhere even to the minimal process required today for people to participate in decisions about projects that affect them. For example, the project authorities have been using various measures to scuttle the effective participation of people in the public hearing process — mandatory since 1997 — before any large project can be cleared. The quality of most EIAs is shameful. The MoEF, which is supposed to be responsible for these processes, has not only been acting as a rubber stamp, but is often actively involved in helping the project authorities scuttle the due process.

The latest and most shocking instance of this came to light in March-April 2005 when the MoEF gave clearance to the proposed Chamera III and Parbati III hydropower projects in Himachal Pradesh. The EIA notification required that the public hearing report for the projects go to the MoEF with inputs from the state environment department and the State Pollution Control Board. However, before the state government could take a decision on these projects, the MoEF gave them clearance, apparently under pressure from the National Hydroelectric Power Corporation. The additional secretary, department of environment, Himachal Pradesh, strongly protested in his letter dated April 25, 2005, to the secretary, MoEF: "These decisions have serious ramifications as it is the state government and inhabitants of the area who have to directly bear the brunt of environment-related problems. Moreover, the role of the state government and the State Pollution Control Board as enunciated in the EIA notification (and related clarifications) and enshrined in Article 48A of the Constitution of India has been apparently overlooked."

When the report of the World Commission on Dams (WCD) was made public in November 2000, there was a golden opportunity to make significant changes in the decision-making process of water and power development projects. However, senior officers at the World Bank worked overtime to ensure that a number of key developing country governments opposed the WCD recommendations. The Bank then used this opposition to justify the non-adoption of recommendations in Bank policies.

The only light at the end of the tunnel seems to be that people are becoming more conscious of the serious adverse impacts of large dams and are opposing large, unjustifiable projects. It will, however, be a long while before this response becomes strong enough to counter the entrenched interests of those who push for large dams.

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Rivers for sale: The privatisation of common property resources

Three case studies from Chhattisgarh — the privatisation of the Sheonath river, the insatiable use of water from the Kelu river by an industry, and the construction of a private dam on the Kurkut river — clearly illustrate how the political economy is promoting the commodification of water, cornering water for the economic interests of the few at the cost of local communities

RIFAT MUMTAZ
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AMITABH BEHAR

THE INDIAN FEDERAL MAP was re-drawn along linguistic lines on the recommendations of the State Reorganisation Commission (SRC-1956) to address the diversity of linguistic identities in the country. 'Linguistic homogeneity' remained the guiding organising principle for Indian federal boundaries until the '90s, when people's struggles for a separate Jharkhand, Uttarakhand and Chhattisgarh challenged this argument on grounds of relative deprivation of underdeveloped regions within large states. In essence, these separate statehood movements were based on challenging and changing the unjust political-economic order, which had led to the marginalisation of these regions in spite of their rich natural resources.

The Prathik (separate) Chhattisgarh movement was based on the marginalisation and exploitation of the Chhattisgarh area, particularly its natural resources (forests, minerals, land and water), by the dominant regions of Madhya Pradesh. The movement argued that Chhattisgarh, in spite of providing a significant chunk of the state's revenue and resources, was not adequately represented in the political matrix of Madhya Pradesh and remained economically exploited and underdeveloped.

Chhattisgarh, India's 26th state, was carved out of the erstwhile state of Madhya Pradesh on November 1, 2000, in the hope of creating a just and equitable political-economic order. Unfortunately, the creation of a new state only shifted the locus of political-economic control from Bhopal to Raipur, and from the caste-class elite of Madhya Pradesh to the elite of the newly-created Chhattisgarh. The poor remain alienated and outside the new economic-political order which, in the past few years, has become even more oppressive and exploitative. It is paradoxical that the very same natural resources for which the separate statehood movement fought on behalf of the ordinary people of the region, are still being cornered and controlled by the elite. In fact the new state, with its neo-liberal agenda, is gradually withdrawing and transferring the rights of local people and communities over access, control, management and ownership of the natural resources upon which they are totally dependent for their livelihood and survival.

In the new Chhattisgarh, the interdependence between local livelihoods and natural resources does not receive the attention it deserves. The Chhattisgarh 2010 Vision Document, prepared by the global consultancy firm PricewaterhouseCoopers, in its SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the region, considers the extensive dependence of the local

population on natural resources as a 'threat' to the state's development. This and every other policy that has been formulated since the state's inception, in the context of natural resources in general and water resources in particular, reflects the same trend. The Water Resource Development Policy 2000, the Industrial Policy 2004-09 and even the Environment Policy of the state point clearly in the direction of water privatisation as the viable and only alternative for water use and management.

The political economy of water in Chhattisgarh

The story of water in Chhattisgarh is a stark example of how a basic need and right is being denied to the people due to the exploitative and unjust economic-political order. It's a telling story of how the government's formal discourse on water harvesting and 'safe drinking water for all' is mere rhetoric; the real underlying discourse is the political economy of water.

To understand the water discourse in Chhattisgarh we need to closely examine the political economy of water, not merely river basins, rainfall or the government's water policies.

Here are three short case studies from the state.

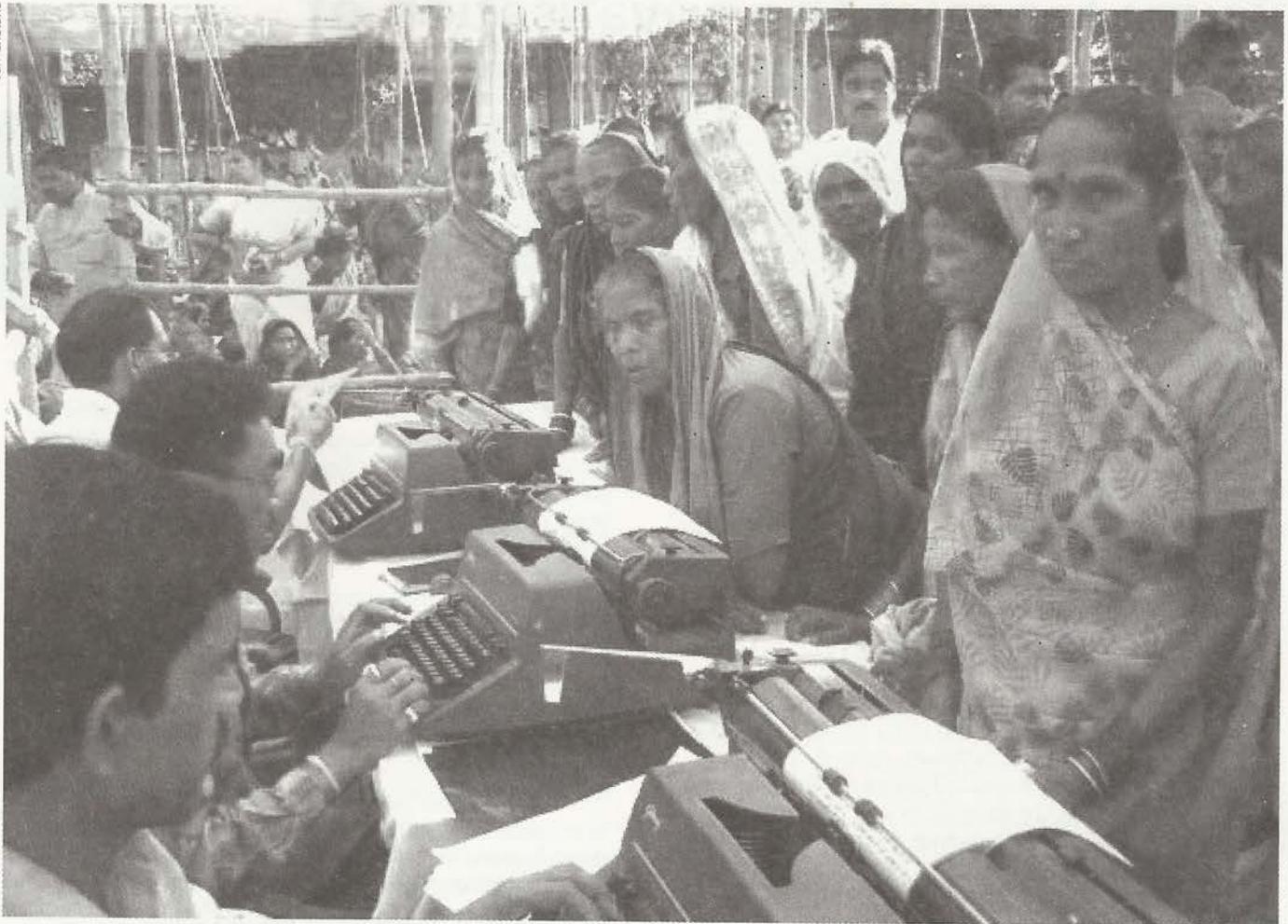
The first case study focuses on the privatisation of the Sheonath river in Chhattisgarh. The second is on the insatiable use of water from the Kelu river by an industry in Raigarh, which leaves the river dry. Finally, we look at the construction of a private dam on the Kurkut river which could cause the displacement of hundreds of poor people and make the river inaccessible to the common man. All three case studies highlight the fact that although water has many dimensions — social, cultural and religious — the central dimension remains a political-economic one.

Sheonath river sold!

The most stark example of 'privatisation' emerged in the region around eight years ago, when water supply from a 22.7 km stretch of the semi-perennial Sheonath river was handed over to local entrepreneur Radius Water Limited (RWL) under a BOOT (Build-Operate-Own-Transfer) agreement to supply water to the Borai Industrial Growth Centre in Durg district. The 1998 project, the first case of river privatisation in India, which gave RWL a 22-year (renewable) 'concession', was signed when Chhattisgarh was a part of Madhya Pradesh.

The move met with protests from almost 15 villages situated along the river banks that were dependent on water from the

Jan Chetana



Dam-affected women registering their protest in Rabo village.

river for agricultural irrigation, domestic household chores, fishing, growing vegetables on the river bank and breeding livestock. People were not allowed to fish or carry out any other activity inside the area where RWL had constructed an 'anicut' across the river. The stored water was meant for distribution to units in the Borai industrial area, during the lean summer season. Activists from all over the country, and the world, condemned the government for selling a common property resource. Following protests and considerable pressure by the people and civil society organisations like the All India Youth Federation and Nadi Ghati Morcha, under the umbrella of the Seonath Mukti Andolan, on April 11, 2003, the Chhattisgarh government decided to cancel the contract. A public account committee was formed to look into the matter; its report is still awaited.

Even if the move to privatise is cancelled, according to an MoU between the state and RWC, the state government will have to pay the company around Rs 100 crore as compensation.

While this is an instance of direct privatisation of a river, the question of ownership and exploitation of water resources needs to be looked at in the wider context of extensive

industrialisation in Chhattisgarh. Chhattisgarh already has 165 large and medium-scale industries that have invested Rs 8,000 crore. The state bagged around 11% of total new investments in India last year; the Confederation of Indian Industries has described Chhattisgarh as having "the best industrial policies in India" (CII, August 24, 2005). Yet, if one were to read Chhattisgarh's official site inviting investors, it is evident that water, a common property resource, is the key to this package so gracefully being offered by the new state to private corporate houses and actors, for their private benefit and interests.

Following the Sheonath case there were other instances in the state where parts of rivers were leased out or handed over to industries for their private use. These include the Kharun river (Nico Jaiswal Group), the Sagari river (S R Group), Indravati river (Tata Group) and Kelu river (Jindal Group) (1).

The state's industrial policy talks about assessing water for industrial use, and a time-bound programme for the construction of anicuts and nullahs in rivers without recognising the rights of common people over a resource that is their lifeline. Such moves would adversely affect the availability of

water for agriculture, drinking, livestock and ecological purposes, and also alienate people from their basic human right to water.

The story of Raigarh and appropriation of the Kelu river

The extraction of water by Jindal Steel and Power Ltd (JSPL) from the river Kelu in Raigarh district is a classic example of a private party usurping common property resources, including waterbodies, on a massive scale without any checks and balances.

JSPL, earlier known as Jindal Strips Limited, started its operations in Raigarh in the early-1990s with the construction of a 500,000 TPA steel plant. The company gradually increased its presence by acquiring coal mines, chromium ore mines and iron ore mines for captive use. For its industrial activities, the group also established a captive power plant.

At the start, the 75 MW power plant was dependent on groundwater extraction through reservoir tanks and borewells. In 1995, the Jindal Group proposed to draw water from the river Kelu for its captive power plant requirements. The Kelu, a tributary of the Mahanadi, is a 95-km-long perennial river in the district of Raigarh; it's the only source of water for the over 100,000 residents of Raigarh town and numerous villages spread along its banks.

In 1996, the district water utilisation council denied the company access to the Kelu on grounds that the river would not be able to meet industrial demand especially during the summer months, taking into consideration the drinking water needs of Raigarh town. In 1997, a state-level committee formed to assess the requirements of water for power and industrial projects in Madhya Pradesh granted permission to the company to build intake wells and a stop dam for consumption of 35,400 cubic metres of water per day. This decision was made in spite of protests and opposition by different groups like the Kelu Bachao Sangharsh Morcha (2).

Over the years, the extraction of water by the Jindal Group has had severe repercussions on the local population. Almost 250 families dependent on fishing in the Kelu have lost their only source of livelihood due to the construction of a stop dam that has drastically reduced their fish catch. The company's intake well at Bonda Tikra, from where water is drawn and supplied to the plant through a one-metre-thick pipeline, has directly affected water supply for irrigation purposes in nearby Gudgahan village. Farmers in this village had earlier mortgaged their lands for a loan to start an irrigation scheme that subsequently failed due to inadequate water; most of the water was being drawn by the steel plant. Besides using water from the river, the company has illegally diverted the Kokadi Talai irrigation canal to suit its own ends. It is also using water from the Tipakhhol dam, depriving many farmers of irrigation water (3).

Over the past few years, the government of Chhattisgarh, unconcerned about the impact of such industrial activity on the local economy, the environment and, most importantly, the rights of local people, has embarked on a signing spree of new

MoUs with JSPL for crores of rupees of investments. These include second-phase expansion of the company's Raigarh steel (sponge iron) plant (Rs 2,060 crore), a 1,000 MW thermal power plant (Rs 3,999 crore) and an industrial park (Rs 32 crore), again in Raigarh.

As part of the steel plant's expansion to 800,000 TPA, which received clearance as recently as August 10, 2005, again amidst strong local protests, the company plans to draw 2,000 m³/hr of water from the Mahanadi river. An estimation of withdrawal of 2,000 m³/hr of water from the river, over a 24-hour daily cycle, totals 77,328,000 litres of water per day (lpd). If an average rural household were to be provided 500 lpd, that would equal the daily consumption of 154,656 households, or a population of 850,608.

It is worthwhile juxtaposing this figure with the figures given in the project's Environmental Impact Assessment (EIA) report, to get a clear picture. The report states that, every year, the expansion would generate additional permanent employment to the tune of 1,250; even the total number of beneficiaries from the project, according to the report, is a mere 6,875. The ratio works out to 1:124. That is, for every one person getting employment there will be 124 who will lose their drinking water supply (4).

A dam on the river Kurkut: De-facto privatisation of a common property resource

Jindal Steel and Power Ltd proposes to build a dam on the Kurkut, a perennial river and tributary of the river Mand, to meet the water requirements of its upcoming thermal power plant in Tamnar, and a 300-hectare industrial park. This will, in effect, make the river 'private property', captive for the power plant and the industrial park. The dam will allow the company to extract 54 million cubic metres of water per year for the thermal power plant and another 52 million cubic metres per hour for the industrial park.

The proposed 18.5-metre-high dam has stirred unrest in the six villages expected to fall within the submergence area. Around 2,500 families in 10 villages located upstream and downstream will be directly affected by the dam.

While actual construction work on the dam began only in October 2004, protests against the dam are as old as 1994, when survey work on the project was first initiated. The protests started in Chharratangar village where the dam was initially proposed. Strong opposition by local people gathered momentum in Rabo village when the proposed site was changed to that village. When site markings started, people from six villages along the banks of the Kurkut came together under the banner of the Majdoor Kisan Sangharsh Samiti to protest against the dam's construction. They sent appeals to the district administration, water resource department, chief secretary, Chhattisgarh, Prime Minister of India, National Human Rights Commission, SC/ST Commission and the Ministry of Environment and Forests (MoEF), until, finally, the district administration ordered a stay on construction. The protestors also initiated direct people's action by taking turns guarding the site and preventing further construction activity.

Apart from the question of the riparian rights of communities, a gamut of issues need to be looked into for a serious and comprehensive analysis of the impact. First, the problem of water pollution and groundwater contamination has to be factored in, considering the extent of industrial waste that will be generated by mine-based industries operating on such a large scale. It is important to examine whether mechanisms have been put in place to monitor the company's adherence to pollution control standards and practices. It is equally important to look at water as part of a larger ecosystem, and the changes that would be brought about due to extensive deforestation. Finally, the impact on groundwater aquifers and aquatic fauna also needs to be studied for any sincere and comprehensive impact assessment.

Laws that are meant to be broken

The MoEF notification on environment clearance for such projects provides space to examine the concerns raised in the previous section. However, in this specific case the state has made a mockery of the said legislation in its blatant violation of the basic norms.

In a recent MoU, signed between the government of Chhattisgarh and JSPL for investments totalling Rs 2,595 crore, it is stated that "the state government of Chhattisgarh will, among other things, provide all necessary help in seeking clearances, approvals, permissions from state/central government departments/agencies for implementation of these projects" (5).

In line with this promise, the state has been absolutely callous in the way it has violated the guidelines of the MoEF in carrying out the entire environment clearance process for JSPL's expansion project. On January 29, 2005, the State Pollution Control Board organised a public hearing for environmental clearance for the proposed expansion of JSPL's existing steel plant in Patrapali, Raigarh. The hearing was conducted as a procedural formality by the local administration and District Pollution Control Board. Yet it turned out to be an historical one with almost 4,000 local people from Raigarh turning up to register their complaints and protest the expansion on the one hand, and the blatant manner in which the district administration and the Pollution Control Board violated the MoEF's guidelines on public hearings. A number of people's groups like the Raigarh Bachao Sangharsh Morcha, Nadi Ghati Mukti Morcha, Ekta Parishad, PUCL and BGVS present at the hearing submitted written objections to the EIA report for the expansion, as well as the hearing process. The MoEF Expert Committee on Industrial Expansion, despite receiving a submission from the local group highlighting these issues, gave the project environmental clearance on August 10, 2005.

The MoEF has given 'in principle forest clearance' to JSPL for construction of the Kurkut dam in spite of the fact that around 180 hectares of forest area are expected to be submerged. The sarpanch of Rabo and a local activist have filed a case with the Central Empowered Committee asking for a stay on the dam's construction and an inquiry into the matter through a site visit.

Conclusions

The three case studies clearly show that the dominant public discourse on water, which focuses on water harvesting, water conservation, potable water, etc, is completely inadequate in addressing the real questions of access, control and ownership of water that lie in the domain of political economy.

If the people's discourse, based on asserting water as a fundamental right, needs to be strengthened we must challenge the underlying iniquitous political economy of water. A political economy that increasingly promotes the 'commodification' of water as a tradeable resource instead of recognising water as a universal need and a basic human right. Where, through the use of neo-liberal policies, water is being cornered for the economic interests of a few, instead of as a community resource. As these case studies strongly show, the trend is towards privatisation of water by delegitimising, through coercive or non-coercive means, communities' rights over water as a common property resource. India's 2002 National Water Policy has already prepared the ground for this transition towards water privatisation, by promoting "the concept of private sector participation in building, owning, operating, leasing and transferring of water resource facilities".

Unfortunately the state is playing a central role in facilitating this transition, by providing a legal policy framework to suit the move towards water privatisation. In the process, it often blatantly violates and selectively uses laws to ensure the move in favour of corporate interests, as seen in Chhattisgarh. This is a significant shift in the character of the Indian state: from being a welfare state, it is now formally taking on the role of a mere regulator or facilitator. In practice it is a partisan regulatory role where the interests of the common man are not recognised. The abdication of state responsibility towards ensuring the realisation of people's rights needs to be strongly challenged and the concerns of social justice brought back centre stage in order to break the political-economic nexus that marginalises people's legitimate claims and rights.

Crucially, resistance to this emerging neo-liberal paradigm that supports water privatisation is coming from the people themselves, as seen in the case of Chhattisgarh. People are organising themselves for collective action, as with the Raigarh Bachao Sangharsh Morcha, Seonath Mukti Andolan and Kelu Bachao Sangharsh Morcha. Importantly, they realise that the real battle for their fundamental rights over water will have to be fought in the political-economic domain.

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Footnotes

- 1 Singh A, *Privatisation of Rivers in India*
- 2 Jha Durga, 'Digging the Graveyard, Study on Jindal Industry in Raigarh'
- 3 <http://www.ektaparishad.org/industrialization.htm>
- 4 Ghotge Sanjeev, 'Technical Critique of EIA report', NCAS 2005
- 5 JSPL press release dated January 8, 2005 (www.indiadaily.com)

Giants in the water market

When a public good such as water is treated as an economic good, with an economic value and price, water is set to become, like oil, a precious commodity that determines the wealth of nations. No wonder corporations worldwide are battling over a \$ 287 billion global water market. This article looks at the major international players in the water market, and charts their rapid growth

MANOJ NADKARNI

THE WORLD BANK has predicted that by the year 2025, two-thirds of the world's population will run short of fresh drinking water. In 2000, *Fortune*, the business magazine, declared: "Water promises to be to the 21st century what oil was to the 20th century: the precious commodity that determines the wealth of nations." According to the magazine, the annual revenues of the water industry amount to approximately 40% of the oil sector.

Unlike oil, the real value of water is incalculable, since no life is possible without it. In 1995, total global water abstraction was some 3,750 km³/year, with actual consumption being 61% of this, or 2,270 km³/year. There are projections that water withdrawal will grow by about 10-12% every ten years, and by 2025 it will reach approximately 5,100 km³/year. Right now, about 57% of total water withdrawal and 70% of global water consumption occurs in Asia where most of the major irrigated agriculture takes place. During the next few decades, the most intensive growth in water withdrawal is expected to occur in Africa and South America (by 1.5-1.6 times), and the smallest in Europe and North America (1.2 times).

Most of the water we use is for agriculture; irrigation accounts for nearly 70% of total global use. Growing food is water-intensive; every kilogram of potatoes we eat uses 1,000 litres, wheat 1,450 litres and rice, 3,450 litres. Industry uses 20%, and nearly every industrial process needs some water; it takes 477,750 litres of water to make a single car, for instance.

The remaining 10% is for everyday use — for drinking, washing, bathing and cooking. We need a minimum of 2-3 litres of water to drink every day.

Not everyone gets those clean 2-3 litres of water: 1.1 billion people worldwide lack clean drinking water, and in what is a sure sign of lack of water, 2.4 billion people lack access to sanitation. An estimated 14,000-30,000 people, mostly young children and the elderly, die every day from water-related diseases. The United Nations' Millennium Development Goals include halving these figures in the next ten years (consensus is that this is unlikely to happen, progress is far too slow). It has been estimated that this halving would cost an extra \$ 16 billion each year, an amount that, as the international NGO WaterAid famously points out, is less than what North Americans and Europeans spend on pet food in one year. Different organisations have estimated that meeting the Millennium Development Goal on drinking water supply

coverage would require between US\$ 10 billion and US\$ 30 billion a year on top of the amount already being spent. The World Health Organisation in its VISION 21 report calculates that US\$ 47 billion per year over 25 years will be required for universal water access.

It may be worthwhile to go the other way and see what the absence of clean water costs: a study based on WHO health statistics that analysed deaths and the burden of disease (measured in Disability Adjusted Life Years: DALYs) due to water, sanitation and related hygiene risks showed a total of some 4 billion diarrhoea cases per year, which resulted in between 1,085,000 and 2,187,000 deaths per year and between 37,923,000 and 76,340,000 DALYs; 90% of these deaths occurred among children under five. Adding other polluted water diseases like worms led to a total estimate of 2,213,000 deaths and 82,196,000 DALYs per year. While the economic dollar cost of DALYs is controversial, if the commonly used figure of US\$ 500 per DALY is used, then the annual health costs attributed to poor access to water and sanitation are in the order of US\$ 40 billion.

Water companies everywhere have grabbed this idea of the economic value and price of water. The current size of the global water market is \$ 287 billion right now, and is expected to be \$ 413 billion by 2010, yet it is considered a 'young' industry serving only 5% of the world's population.

It was the United Nations that started the world thinking of water in terms of money. The 1992 International Conference on Water and the Environment, held in Dublin, was a precursor to the United Nations Rio Conference on Environment and Development. It came up with what is known as the Dublin Statement, which said: "Water has an economic value in all its competing uses and should be recognised as an economic good." The statement did go on to add: "Within this principle, it is vital to recognise first the basic right of all human beings to have access to clean water and sanitation at an affordable price."

Water markets are actually not uncommon. Wherever people have more water than they need they sell it to others. In the USA, rural water markets have become institutionalised, with farmers' associations selling water to each other and to urban centres in need of water. Farmers' markets exist in India too, some formal, others informal, with prices fixed through negotiation, and payment not in currency but in labour or products.

Some farmers' water markets in India have become notorious. A well studied case is in Tirupur, which has a large and prosperous textile manufacturing and dyeing industry that is dependent on water from the Noyyal river. Over the years, the industry had dangerously polluted the river and depleted its water supply to the point where the entire industry was in danger of closing down because of scarcity of clean water. Farmers outside the town realised they could actually make more money selling their groundwater to the dyeing industry than by growing crops. As the scarcity intensified, water prices shot up and farm wells pushed up their prices. The result: industrial pollution now affects most of the surrounding soil too and the water table has been significantly lowered.

In the Indian situation, where all surface water is public, groundwater belongs to the person who owns the land that 'contains' it. So, if you are a farmer with a lot of acreage, you can pump water out and sell it. In parts of Karnataka, farmers have switched from traditional crops to those that do not need much water, not because of water conservation but because they can sell the surplus.

However, such water mining works only for farmers and industries. The real money to be made in water is not in the rural areas but in the rapidly urbanising big towns, with suburbs extending further out and new satellite townships coming up every day. All of these are dependent either on water systems left over from colonial times or new provisions dependent on aid. This is where the interests of big players in the water market lie.

Helped by the liberalisation policies of the World Bank and the IMF these companies have become rich and powerful. While the 5% mentioned earlier sounds small and trivial, the growth of these companies is frightening. In 1990, around 51 million people got their water from private companies, according to water analysts. That figure is now more than 300 million.

As in oil, there are the major international players who call the shots; they are big enough to influence multilateral donor agencies and governments, and their names feature in all the lists of the global top-performing companies, with revenues matching those of small countries. Analysts expect these companies will control 65-75% of formerly public waterworks in Europe and North America in the next 15 years.

The two biggest water companies in the world are Veolia (Vivendi) and Suez, both French. France was one of the few countries that privatised water services as early as the middle of the 19th century. Both Suez and Veolia pioneered the building of the water industry, learning the trade and expanding their operations through their home-based markets. Together, they have monopoly control over 70% of the existing world water market. Suez operates in 130 countries and Vivendi in well over 90. While Vivendi is the larger of the two water giants, posting bigger annual sales than its rival mainly because of its diverse operations and large customer base in France, Suez serves far more people — around 110 million globally. Of the 30 water contracts awarded by big cities since the mid-1990s, 20 went to Suez.

In 1990, around 51 million people got their water from private companies, according to water analysts. That figure is now more than 300 million

Wherever these companies operate, in different countries or different areas of operation such as desalination or wastewater or distribution, they form or acquire subsidiaries with expertise in these areas. Or they get into formal partnerships and joint ventures with other corporations on specific projects. Because of local subsidiaries, these big players are often hard to identify. Suez, for example, goes by other names such as Ondeo, Aqua Chem, Degremont and United Water Resources. Headquartered in Paris, France, Suez was originally set up in 1858 to build and operate the Suez Canal. Since then it has spread all over the globe for the control of water. Suez has a total revenue of \$ 41.9 billion, of which \$ 15.23 billion is from water services. Its net income is \$ 2.1 billion. It's these figures that put it at 99 on the Fortune 500 list of the world's most successful businesses. Suez has its biggest grip on markets in the United States, Europe, China and Latin America. But because of the bad press that Suez (and other water companies) is getting as it tries to find markets in the developing world, it is backing off from a third of its investments in developing countries, maintaining only those which carry low levels of risk. Suez is the only big water corporation that has a water contract in India — the Sonia Vihar plant in Delhi.

Veolia Environnement operates internationally in waste management and energy. It was previously called Vivendi, and before that Generale des Eaux. After it ran into major financial difficulty when it went into the movie and music business, the company was split up, and the environmental services element of Vivendi was recreated as Veolia in 2003. In many countries it still operates as Generale des Eaux, in others as Onyx Environmental and Connex. Veolia is number 463 in the Fortune 500 list, with a net income of US\$ 2.58 billion, from a total revenue of US\$ 35.96 billion. Water services make up 40% of this.

Bouygues, another French water company and one of the bigger companies, operates through its subsidiary SAUR in 80 countries around the world. Recently, the RWE Group from Germany overtook it to third place. RWE is also known as Thames Water, American Water and China Water Company. It is number 53 in the Fortune 500 list and had sales of \$ 59.4 billion in 2002, of which water sales accounted for \$ 3.6 billion. RWE operates in over 50 countries, with 70 million customers. But its biggest markets are in the United States, Europe, China and South America. RWE, originally an energy

group, got so big by merging with Thames Water in 2000, creating the third largest water service supplier in the world. Later, in 2003, RWE acquired American Water, which gave it access to US markets since AW already had a presence there.

Bechtel, the American construction giant, has also entered the water business and because of its size is one of the big water companies though its water operations are not as big as Suez and Veolia. But Bechtel is a private family-owned company, so its finances are private. It has a partner relationship with Edison, an Italian water and electricity company, and together they own the International Water Company. In 2004, Bechtel revenues were \$ 17.4 billion. Right now, Bechtel is receiving a lot of criticism because of water infrastructure projects in Iraq. Shortly after the war started, the US government awarded Bechtel a private \$ 680 million contract for the reconstruction of Iraq. Now that contract has increased to more than \$ 1.8 billion. Bechtel received \$ 515 million to rebuild Iraq's power stations; \$ 33 million for roads and railroads; \$ 44 million to dredge a deepwater sea port; \$ 45 million for a telephone network; \$ 52 million for repairs to Baghdad airport; \$ 53 million for the reconstruction of schools; and, finally, \$ 208 million to rebuild sewage and water treatment plants.

Though these water companies are in a sense rivals and business competitors, they often team up directly or through their subsidiaries. A well-documented example of water privatisation — the Buenos Aires water supply concession — was done through a company called Aguas Argentinas, a consortium of five partners including both Vivendi and Suez.

All these water multinationals see themselves as multi-utility providers and this is how they continue to make money even while their operations are being closed down in country after country. They use their range of expertise as water corporations to deal in wastewater services, water treatment facilities, water-related construction and engineering and research and development of water technologies like desalination. So, in some guise or the other, the doors are always open.

The doors are further jammed in place by the pressure these companies are able to put on supposedly independent multilateral organisations. Take the World Trade Organisation that is supposedly open only to governments of participating nations. As a business, Suez does not officially take part in the events, but the European Services Forum (ESF) does. The ESF is formed by Suez and Veolia and can influence negotiations. At the collapsed WTO meeting in Seattle, the ESF was an official member of the EU WTO delegation. As it is, executives of the major French water companies often end up in government.

Multilateral international development lending agencies support the big water companies, though they are supposed to be pro-poor. Both the IMF and World Bank's policies and programmes strongly reflect their views on what is euphemistically called "public sector reform", a major component of which is the privatisation of state-owned utilities, including water services. The pressure is applied quite directly as 'structural adjustment' and 'water sector restructuring' loans from the World Bank, requiring privatisation of water services by giving concessions,

Global bottled water market

Leading countries' consumption and compound annual growth rates (CAGR) 1999-2004

| 2004 Rank | Countries | Millions of gallons | | CAGR 1999/04 |
|-----------|------------------|---------------------|-----------------|--------------|
| | | 1999 | 2004 | |
| 1 | United States | 4,579.9 | 6,806.7 | 8.2% |
| 2 | Mexico | 3,056.9 | 4,668.3 | 8.8% |
| 3 | China | 1,217.0 | 3,140.1 | 20.9% |
| 4 | Brazil | 1,493.8 | 3,062.0 | 15.4% |
| 5 | Italy | 2,356.1 | 2,814.4 | 3.6% |
| 6 | Germany | 2,194.6 | 2,722.6 | 4.4% |
| 7 | France | 1,834.1 | 2,257.3 | 4.2% |
| 8 | Indonesia | 907.1 | 1,943.5 | 16.5% |
| 9 | Spain | 1,076.4 | 1,453.5 | 6.2% |
| 10 | India | 444.0 | 1,353.3 | 25.0% |
| | Top 10 sub-total | 19,159.8 | 30,221.6 | 9.5% |
| | All others | 6,833.5 | 10,535.0 | 9.0% |
| | Total | 25,993.3 | 40,756.6 | 9.4% |

Source: Beverage Marketing Corporation

leases, or management contracts to "international operators" that have the supposed expertise to handle such services.

In a world where clean water is getting harder to find, and where the poor are being denied their share, the logical step for business is to further own water by bottling it and selling it to those who can afford it. The global bottled water market, with a total yearly volume of 89 billion litres, is estimated to be worth US\$ 22 billion. Western Europeans are the biggest consumers (85 litres/person/year), but the most promising markets are in Asia and the Pacific where an annual increase of 15% is projected.

In India the market for packaged water is estimated to be between Rs 8 billion and 10 billion, and is growing at the rate of nearly 40% per annum. Even though it accounts for only 5% of the total beverage market in India, branded bottled water is the fastest growing industry in the beverage sector. In spite of just making it onto the list, it is already one of the top 10 global bottled water markets.

And this trend does not show any signs of stopping. As long as our governments shirk their responsibility of providing water, of abiding by some standards of quality and quantity, the water companies will go grabbing and selling back to us what should be everyone's right. Those who can afford to will sit and compare brands and toss empty bottles out into the garbage. Those who cannot afford such prices will fill those same bottles for their drinking water, drop by drop, from some leaking municipal pipe. Leaks that privatisation will supposedly plug.

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Boond-boond mein paisa: Bottled water is big business

Corporate control over water and water distribution in India is growing rapidly: the packaged water business is worth Rs 1,000 crore, and it's growing at a huge 40-50% annually. Around 1,200 bottling plants and 100 brands of packaged water across the country are battling over the market, overdrawing groundwater, and robbing local communities of their water resources and livelihoods

LAXMI MURTHY

BOTTLED WATER, one of India's fastest-growing industries, is a business built on the foundation of bad governance, inequity and blatant exploitation. Hard to believe, but the evidence is becoming clearer.

According to UNDP estimates, around 1.2 billion people worldwide lack access to clean drinking water. Today, there are more people in the world's hospitals suffering from waterborne diseases than any other ailment. Some 6,000 children die of such diseases every day.

Providing safe drinking water is the responsibility of the state. That they are failing miserably is evident from the fact that over 1,600 Indians reportedly die every day because of waterborne diseases. Despite these astounding figures, the Indian state has literally washed its hands of the responsibility of providing clean drinking water to its citizens.

When one in six people globally lives without access to clean drinking water, does the answer lie in high-tech water purifiers and bottled water that's out of reach for a majority of the Indian population?

Multinational corporations would have us believe so. And the reason is not hard to find: along with imported water treatment technology like activated carbon and ultra violet (UV) disinfection (Aquaguard), reverse osmosis (Reviva) and resins (Zero-B), the water treatment market is estimated to be worth around Rs 700 crore.

The bottled water industry is estimated to be a whopping Rs 1,000 crore business. It has grown at a rate of 40-50% annually over the past four years or so. According to the Bureau of Indian Standards, there are 1,200 bottled water factories all over India (of which 600 are in the state of Tamil Nadu). Shockingly, in most cases, the industry is making money practically for free, as bottling companies pay a minute amount to the government for the use of groundwater. To quote one example: In drought-prone Kala Dera, near Jaipur, Coca-Cola gets its water free except for a tiny cess it pays the government — a little over Rs 5,000 a year in the three years 2000-2002, and Rs 24,246 in 2003.

Corporate control over water and water distribution in India is rapidly growing. As globalisation opens up opportunities for private players, investing in water and/or manipulating water scarcity makes increasingly good business sense for corporations. Over 100 brands are battling over the bottled water market, hard-selling their products in every way possible

— better margins to dealers, aggressive advertising, catchy slogans.

The real boost to bottled water came in the early- to mid-1980s with the growth of PVC packaging and, later, PET bottles. By the mid-1990s, many more players had entered the market, and competition was stiff: Coca-Cola's Kinley, Pepsi's Aquafina, Nestle's Pure Life and a host of smaller companies. By 2002, Kinley overtook Bisleri, with a market share of 35.1% compared to Bisleri's 34.4%. Kinley's slogan, '*boond boond mein vishwas*' (reliability in every drop), capitalised on the unreliability of ordinary piped drinking water.

Initially pitched at the well-heeled, bottled mineral water brands like the French-manufactured Danone were promoted at clubs, fitness centres, cinemas, department stores, malls, ice-cream parlours, cafes and retail sports outlets, besides restaurants, hotels and supermarkets, with a price tag of Rs 70 for a 1 litre bottle. Other brands later began pitching for the larger middle class and lower-middle class markets.

The summer of 2002 witnessed a 'packaging revolution' of sorts, with Coca-Cola India launching Kinley in 200 ml cups. The cups, priced at Rs 3 each, were first rolled out in pockets of Gujarat, and gradually spread nationwide. With this initiative in place, Coca-Cola began to generate market share from the institutional segment, such as restaurants and hotels, caterers, and transport channels like buses and trains.

The major growth in packaged water, however, was in the bulk water segment. According to estimates, bulk water packs of 20 litres, targeted at the institutional and home segments, grew at a rate of 30-40% in 2002 alone. Bisleri re-invented its 20-litre jumbo home pack, fitted with a spout, to acquire a more 'consumer-friendly' image.

According to industry estimates, the main consumers of packaged water are no longer restricted to the upper class but include middle class and lower-middle class families as well. The 'rural' market is currently dominated by tourists and travellers; packaged water is now beginning to be seen as an essential appendage to any form of travel.

Chennai accounts for a quarter of the industry's revenues

The South, which is prone to water shortages, is one of the industry's largest markets. Chennai alone accounts for a quarter of the revenue of the Rs 1,000-crore packaged water industry.

Seven hundred thousand litres of water are sold in this city every day, of which 300,000 litres and 200,000 litres are reportedly supplied by multinational water brands and Parle's Bisleri, respectively.

According to the Tamil Nadu Packaged Drinking Water Manufacturers Association, there are 370 authorised water supply units across the state of Tamil Nadu. The drinking water industry here has seen tremendous growth in the last four years, with hundreds of small-scale suppliers entering the water market. Regional players operate plants replete with wells/borewells, treatment units with modern reverse osmosis techniques and UV radiation units.

Around 220 water units operate near Chennai. Every day, companies rake in revenues of Rs 80,00,000 to Rs 1 crore from the city, according to industry estimates. Interestingly, the ratio of each player's market share to the entire packaged water market is the same in both lean and peak seasons. The higher-income group and corporates usually go in for multinational brands like Kinley, while middle-income households prefer local suppliers. Currently, Bisleri, Apollo and Team are among the leading brands in the city.



Sharad Halksar

The average price of a 25-litre can of water has fallen to Rs 25 from Rs 35 last year. This year, Brita, a can manufacturer that supplies 25-litre bubble tops in Chennai, slashed prices by Rs 5. Citing a 3% market share, the unit's proprietor, Mohan Raj, admits that rivals have eaten into the revenue. Chennai-based Cherio claims to have a 25% share in the regional market and says it is one of the top five players in Tamil Nadu. Bulk water forms 25% of Cherio's sales, while bottled water accounts for the remaining majority.

Bottled water is available in differently-sized packaging, from 200 ml (popular on flights) to 500 ml (a huge hit among the youth) to 1 litre and the large 2 litre bottles. Bulk water usually

comes in two sizes — the 25 litre HDPE can and the 20 litre bubble top PET. Pepsi, for its part, has priced the 1 litre Aquafina pack at Rs 12 to cater to the mass segment. While its retail strategy centres on the 1 litre pack, the company has also launched 2 litre and 500 ml packs to suit various consumer requirements.

Apart from domestic and commercial use of packaged water, the Indian Railways is a huge potential market. Water bottles, especially the 2 litre variety, are fast movers among the travelling population. According to officials at Cherio, the railways order 10,000 cases (of 12 bottles each) a day. It accounts for 5% of Cherio's water sales.

Grocers are among Aquafina's key distribution points, while top-end bottled water is selling fast across fine-dining restaurants. The Chennai-based Shyam Group of Hotels' Aqua Division — which sells the water brands Amravathi and Savera all over Chennai — has fixed a maximum retail price of Rs 30 per can. After factoring in distribution and pilferage costs, the company says it makes a profit of Rs 2 per unit, and sells 2,500 cans a day. According to K Paari, manager, Aqua Division, the company bottles around 25,000 litres of water in Chennai every day. During the summer months (April to July), this rises to about 40,000 litres a day.

The myth of the 'safe bottle'

Ironically, bottled water that claims to be a 'safe' alternative to ordinary tap water is itself suspect, as was revealed in a high-profile exposé by the Centre for Science and Environment (CSE). The CSE study in February 2003 showed that most brands of packaged water available in the country contain levels of pesticide — several of them banned — significantly higher than permissible limits. These pesticides include organochlorines, organophosphorous, chlorpyrifos, malathion and DDT, which can cause serious physical impairment ranging from damage to the central nervous system to various cancers and congenital malformations.

The study found that while packaged water brands in Delhi had total pesticide content 36.4 times higher than permissible limits, Mumbai brands had 7.2 times the standard content. Evian, which is imported from France and not bottled in India, was the only brand in which no traces of pesticide were found. Significantly, the European Economic Commission directs that the maximum residue limit for total pesticides is 0.0005 mg per litre, and 0.0001 mg per litre for a single pesticide.

A month after publication of the study, the government withdrew the licences of eight bottled water units. This was followed, in February 2004, by the affirmation by an all-party, 15-member parliamentary committee, that beverage giants Coca-Cola and Pepsi Cola had been using pesticide-contaminated water. Pesticides, including lindane, DDT, chlorpyrifos and malathion have apparently contaminated groundwater sources because India has yet to formulate a comprehensive policy on pesticides used extensively for agriculture and vector control.

More recently, a test conducted by *The Tribune* newspaper

through the department of microbiology, Punjab Agriculture University (PAU), in July 2005, revealed the presence of bacteria found in human and animal faeces in bottled water, indicating that it was contaminated and unfit for human consumption.

Of the nine randomly-picked sealed bottles of packaged drinking water — HPMC, Thirst, Kinley, Fresh 'n' Cool, Aquafina, Blue Label, Equal 212, Bisleri and Springwell — from markets across Chandigarh, all tested positive for bacteria of the coliform group which comprises *Escherichia coli* (or *E coli*), coliform and faecal streptococci.

A significant recommendation of the parliamentary committee was the need to introduce norms to monitor the quality of ordinary drinking water. Such monitoring would also serve to highlight major sources of contamination of ordinary drinking water, which is what most people in the country drink.

Bottling industry causes water woes

The water industry, which depends on groundwater, is a lucrative business for several players including private suppliers who sell water to water tankers and big bottled water companies. Over-extraction has led to the rapid depletion of water tables as well as deterioration of water quality in most cities. Higher rates of groundwater extraction in coastal areas have also led to salinity intrusion into coastal aquifers, especially in Tamil Nadu and Gujarat. Unplanned and uncontrolled groundwater extraction has disturbed the country's hydrological balance.

For instance, Samriti, a Hyderabad-based NGO, alleges that Sri Sarvaraya Sugars, a bottling unit dedicated to producing Coca-Cola's Kinley brand of water, located in the Khammam district of Andhra Pradesh, draws 225,000 litres of water a day. As a result, borewells in certain parts of Sattupalli village, that has a population of 25,000, are reported to have dried up. Similarly, M V R Mineral Water and S R Minerals, both contract bottlers for Coca-Cola's Kinley brand of water, have been accused of depleting groundwater in Athur village, 40 km northwest of Chennai. M V R Mineral Water reportedly extracts 132,000 litres of water every day through deep borewells.

In Rajasthan's Kala Dera, where there is a Coca-Cola bottling plant, the water table has plummeted. Wells in the area, varying in depth from 40-80 feet, are bone dry. The villagers claim that seven or eight years ago, these wells used to have water at a depth of around 10-15 feet. Farmers are forced to dig borewells and use submersible pumps, with the motor itself submerged to depths of 200 feet or more.

According to officials at the Ground Water Board's Jaipur regional office who visited the site of the Coca-Cola plant thrice during mid-2004, the unit extracted 148,259 cubic metres of water in the seven months from March to September 2003. While additional extraction amounting to 100,000 cubic metres was estimated till the end of 2003-04, the figure during 2002-2003 was 137,694 cubic metres. This water could have irrigated land measuring at least 10,000 bighas, and produced agricultural yields capable of sustaining around 5,000 rural families!

Although companies are reluctant to part with production figures, it is estimated that the Coca-Cola plant in Kala Dera produces 600 bottles of soft drinks every minute. Activists say that 24 trucks, each laden with 1,100 crates, transport its products out of the plant each day.

As local sources of water become contaminated, demand increases for water corporations to sell a product that was once free.

Coca-Cola, the biggest player in the bottled water industry in India, has been responsible for a variety of violations. In Plachimada, Palakkad district, Kerala, the Hindustan Coca-Cola Beverages Pvt Ltd bottling plant has been depleting groundwater and distributing toxic waste as fertiliser to farmers around the bottling facility; this has created a serious public health problem.

The Kerala High Court, in December 2003, directed Coca-Cola's Plachimada bottling plant to find alternative sources of water. It also said that the company should only be allowed to use as much water as that used by a landowner with 34 acres of land. But then, in April 2005, the High Court permitted Coca-Cola to extract up to 500,000 litres of water a day (the company needs 15,00,000 litres per day for optimal production) from the common groundwater resource at the Plachimada facility.

Since April 22, 2002, the residents of Plachimada have been on a vigil outside the gates of the Coca-Cola bottling plant in their village. The local panchayat has refused the company a licence to operate, and the bottling facility — the largest Coca-Cola bottling facility in India — was forced to shut down temporarily.

In another recent victory, in August 2005, the Kerala State Pollution Control Board ordered Coca-Cola's bottling plant to “stop production of all kinds of products with immediate effect”. The company, in direct contravention of Indian laws, had resumed “trial” operations at its Plachimada bottling facility on August 8, 2005. The state government of Kerala also recently announced that it would challenge Coca-Cola's right to extract water from the common groundwater resource.

The privatisation and bottling of water for profit denies the majority of people a fundamental right that should be guaranteed by the state. In the absence of an effective nationwide policy and norms for groundwater use, it appears that the bottled water industry is getting away with making huge profits out of a resource that rightfully belongs to all citizens. And, in the process, also destroying the environment and people's livelihoods.

Surely there's a message in the bottle that the policymakers will be forced to see?

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Robbing Paul to pay Peter

India's National Water Policy accords top priority to drinking water. In practice, however, states seem preoccupied with meeting industrial water needs. In Tirupur, Tamil Nadu, 737 textile units consume 90 million litres of water every day, sending groundwater levels plummeting to below 800 feet. Until the industry-government nexus is broken, the priorities expressed in the Water Policy will remain on paper

NITYANAND
JAYARAMAN

THE WATER LEVEL IN THE METTUR DAM is a barometer of tension between Tamil Nadu and Karnataka over the river Cauvery's waters. High levels in the Mettur reservoir, which marks the Cauvery's entry into Tamil Nadu, generally mean more water for Tamil Nadu, and less tension between the two states. Ironically, for a river that is brought to Tamil Nadu after much struggle, the Cauvery receives a deadly welcome at the Mettur dam. Millions of tonnes of toxic 'red mud' — a caustic waste produced by alumina smelters — are dumped on the banks of the Mettur reservoir by Madras Aluminium Co Ltd (MALCO), a company owned by the UK-based mining giant Vedanta Plc.

When the reservoir is full, the waters reach within a few metres of the red mud mountain. Villagers from nearby Thippampatti say that a heavy downpour at this stage could breach the flimsy embankment and empty the entire toxic mountain into the reservoir. Such an incident would be disastrous for downstream communities.

Less than 2 km below the dam, another company — Chemplast Sanmar — empties untreated effluents from its chemical and PVC plastic factories into the river, at a point upstream of several government drinking water works. A recent analysis of an air sample taken from Chemplast's effluent discharge point revealed the presence of at least 17 chemicals, including vinyl chloride, ethylene dichloride (EDC), methylene chloride and chloroform. All four chemicals are carcinogens. EDC levels were 32,000 times more than safe levels, and vinyl chloride roughly 2,100 times above safe levels.

In July 2005, the Indian People's Tribunal on Environment and Human Rights (IPT), headed by Justice (Retd) Akbar Kadri of the Madras High Court, released the findings of its inquiry into alleged environmental and human rights violations by MALCO and Chemplast in Mettur. Among other things, they found that the companies' wastes have contaminated groundwater in at least two panchayats. Chemplast has buried hundreds of tonnes of highly toxic wastes, including mercury and dioxin-containing sludge, and this explains the ever-expanding plume of groundwater pollution.

While most people make do with contaminated water, or face extreme hardship in accessing adequate quantities of clean water, some get piped water from the companies. But villagers complain that company water is sometimes unpotable, and also places them at the mercy of the polluters. They say the company cuts off the water if they raise any pollution- or

compensation-related issues.

"Communities in Mettur lack even drinking water. We have plenty of water in our wells, but it can't be used because the companies have spoilt it. But both Chemplast and MALCO have been permitted to draw their requirements from the reservoir. How is it that there is plenty of water for industries, but never enough for people's basic needs?" asks G Madheshwaran of the West Gonur Farmers Welfare Association.

Pollution pays

Lax environmental regulation is possibly one of the biggest draws for industries setting up in Tamil Nadu. The Tamil Nadu Pollution Control Board (TNPCB) is known for its tolerance towards pollution, particularly by big revenue-earning industries. Farmers living in the Noyyal river basin downstream of the textile boom town of Tirupur will tell you that.

The bleaching and dyeing operations that go into the making of T-shirts and underwear are water-intensive and polluting. Each day, the 737 textile units consume upwards of 90 million litres — or 7,500 tanker loads — of water, mined from places as far away as 50 km. The unregulated mining of water has sent groundwater levels plummeting to below 800 feet, drying up the already desiccated land all the way to Palladam, a town more than 30 km away.

At least 80 million litres of highly saline and heavy metal-laden effluents are returned to the environment through drains, rivers, ponds and cesspools. In the immediate vicinity of Tirupur, the ground and surface water are totally contaminated. Indeed, over a period of time, the effluents have filled the Orathupalayam dam to the brim. The irrigation dam was built over the Noyyal river — a tributary of the Cauvery — in 1992. However, farmers had until recently prevented the intentional release of effluents from the dam. Seasonal releases during heavy monsoons have been sufficient to render up to 3 km of land on either side of the river "completely unfit for cultivation" (1).

On August 22, 2005, the dam was drained of more than 10 years worth of stagnant effluents. The exercise flushed over 0.5 million cubic feet of toxic effluents into the Cauvery, and yielded more than 400 tonnes of dead fish (2) and a reservoir bed that is several metres thick with toxic sludge. The Madras High Court has prohibited the release of any effluents into the Noyyal, and ordered the closure of the textile units until effluent treatment plants with reverse osmosis (RO) units are installed.

Frontline reports that farmers in Chinnamuthur, whose lands have remained barren for more than 10 years, have been offered ridiculous figures like Rs 412.50/acre. A number of drinking water schemes on the Noyyal have been abandoned because of the pollution, and the courts have asked the government — not the polluter — to pay for the remediation of groundwater.

The government, though, has shown no enthusiasm about making the polluter pay, even for damage to its own infrastructure. Nor has it questioned the perverse logic of setting up water-intensive units in water-stressed areas. In accommodating industry, the government has been prepared to sacrifice the drinking water needs of entire districts.

More water for the polluter

Having contaminated the local groundwater, Tirupur industrialists were forced to truck water in from great distances, paying up to Rs 45 per 1,000 litres of raw water in addition to transport charges. The water was disposed as effluent after one use, placing water supply areas under severe stress. Factories in industrialised nations re-use water four to five times. Rather than encourage this practice, and perhaps cap the growth of this resource-intensive industry, Tamil Nadu Chief Minister Jayalithaa Jayaram chose to present the Tirupur industries with a uniquely designed water supply scheme.

A special company called New Tirupur Area Development Corporation Ltd (NTADCL) was set up, with \$ 25 million from the US Agency for International Development (USAID), to draw 185 million litres per day from the much-contested Cauvery, pipe it over 55 km to a storage and treatment plant, and distribute it to the Tirupur industries and the municipality.

Executing the scheme for NTADCL are contractors, some of whom like US multinational Bechtel stand accused of war profiteering in Iraq and being an integral beneficiary of the American war machine. Bechtel, which received upwards of \$ 11.7 billion in US government contracts between 1990 and 2002 (3), many of which were facilitated by USAID, will construct the 55-km pipeline. In Cochabamba, Bolivia, Bechtel's take-over of municipal water supply pushed up water-related expenses for some domestic consumers by 500% (4). The civil unrest following the skyrocketing water prices led to nasty skirmishes between the police and the people, resulting in the death of at least one activist.

Mahindra & Mahindra and Larsen and Toubro will build the water storage and treatment structures while United Utilities and NTADCL will run the joint venture to deliver water and collect the charges, among other things.

Of the 185 mld, Tirupur industries will receive 115 mld of water. Tirupur municipality, which includes 60,000 slum-dwellers, will get 26 mld, and 792 wayside rural settlements will share the remaining 36 mld. Reportedly, domestic consumers will initially pay Rs 3.50 per 1,000 litres, and the price will be revised upwards every two years. Industrial consumers will have to pay a rate that will allow NTADCL to recover total costs plus returns over the 30-year concession period. Specifics of the concession

agreement and guarantees extended by the Tamil Nadu government remain shrouded in secrecy.

The American interests in this scheme are obvious. US brand names like Nike, Adidas, Wal-Mart, Ralph Lauren, May Stores, JC Penney and Victoria's Secret source their hosiery from Tirupur. Bechtel is a favoured US corporation with close ties to the Bush administration. Indeed, the USAID website announces that its programme in India "advances US national interests" (5).

The NTADCL plan was justified by the drinking water component. However, it was also clear that the only way drinking water needs would be met is if they could piggyback on a grand plan to supply industry.

Who pays for pollution?

On the one hand, the Tamil Nadu government has stepped in to help the Tirupur industries with more secure access to treated water. On the other, it is currently engaged in bailing out the industry by seeking to invest taxpayers' money to set up the pollution control infrastructure for Tirupur industries. The \$ 1 billion industry is being projected as the victim — the poor little rich kid.

The Madras High Court order requires all Tirupur units to route their effluents through treatment plants and RO units. The equipment and installation alone will cost Rs 140 crore, a windfall for a host of civil contractors, equipment suppliers and RO membrane suppliers like US-based Dow Chemical and Hydronics, and German companies such as Koch and Grundfos.

Treatment costs are also expected to be significant — between 8 and 16 paise per litre of waste water — because reverse osmosis and multistage evaporation are electricity-intensive processes.

The Tirupur industry has the favour of the chief minister. In July 2005, Jayalithaa wrote to the prime minister seeking an "absolute" subsidy for the Tirupur industries. Since Tirupur was generating substantial foreign exchange, she argued that the producers needed the government's support (6).

Sources that wish to remain anonymous suggest that the Tamil Nadu government may have tied itself into an inextricable contract with NTADCL. The recent pollution-related developments may actually have grave ramifications for the viability of NTADCL and the very survival of the Tirupur industries.

If, according to the court order, the industries re-use the treated water, their water requirement could drastically reduce. That would affect the guarantee given by the state to NTADCL assuring offtake of 115 mld for use by the Tirupur industries. Going by the looks of it, NTADCL may turn into another Enron-like albatross around the state exchequer's neck.

Contractual earmarking of water for privatised industrial supply runs counter to the National Water Policy's stated priority for drinking water. Industrial water supply contracts such as with NTADCL or the now-cancelled Borai Water Supply deal between the Chhattisgarh government and Radius Water Ltd oblige the state to pay substantial penalties if the contract is cancelled or if

assured quantities of raw water are not available for the concession-holder to process and sell.

Take the Chhattisgarh example. According to the contract (7) inherited by the Chhattisgarh government from the Madhya Pradesh government, Radius was allowed to develop water sources (through construction of up to three barrages) over 23.5 km of the Sheonath river for supply of water — between 4 million litres per day to a maximum of 30 million litres per day — to existing and expected industries in the Borai Industrial Growth Centre in Durg district. With a requirement of 3.6 mld, Hindustan Electro Graphites (HEG) was, and is, the only major consumer of water in Borai.

A take-or-pay clause in the contract stipulates that the Chhattisgarh State Industrial Development Corporation (CSIDC) would have to pay Radius for a minimum of 120 million litres per month (4 mld x 30 days) regardless of whether or not the

water was consumed. If demand exceeds 120 million litres in a month, CSIDC would have to pay for the actual quantity consumed, at Rs 12.60 per 1,000 litres. But if Radius failed to deliver the minimum guaranteed quantity, it would have to pay a compensation of only Rs 3 per 1,000 litres of shortfall.

Between December 2000 and June 2002, CSIDC had coughed up Rs 290.81 lakh to Radius, even though only Rs 161.61 lakh was sold to the industries.

Downstream communities blamed the Borai project for the falling groundwater table. Fisherfolk suffered because the company had blocked all access to fishing grounds over a half-kilometre stretch of the river. Downstream drinking water schemes, including for the nearby town of Durg, were threatened, especially during lean seasons.

The Borai scheme finally succumbed to the heated protests of villagers, and was cancelled by the Chhattisgarh government.

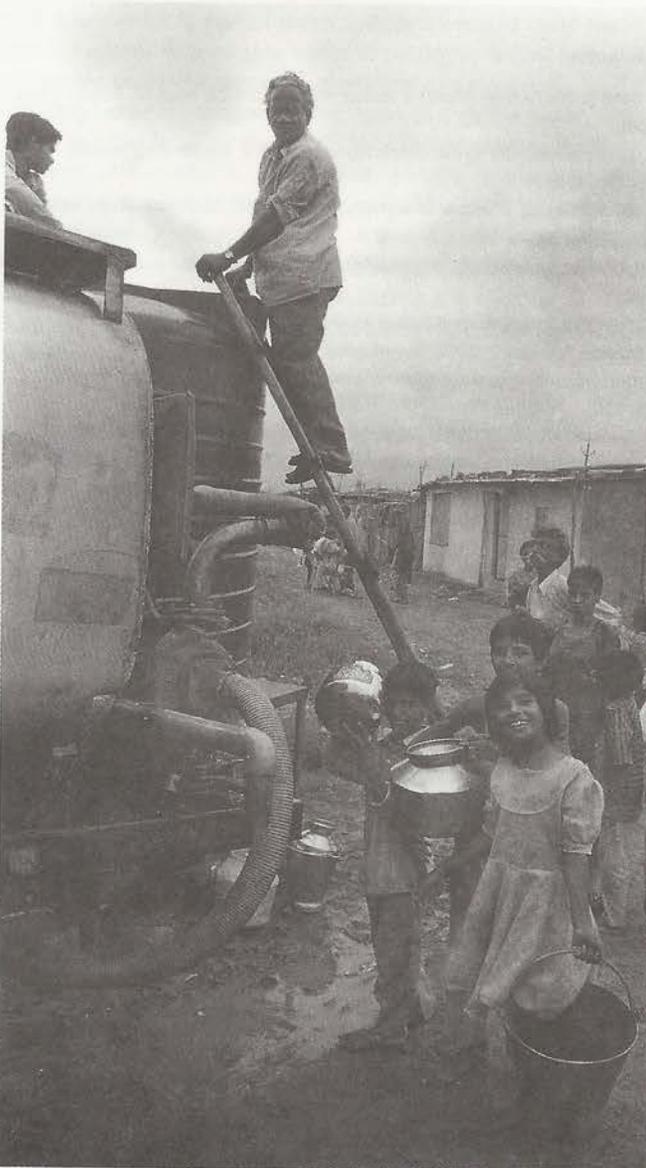
In 2002, Kerala proposed an ambitious industrial water supply scheme. The Kerala State Industrial Development Corporation (KSIDC) and the Kerala Water Authority (KWA) together prepared the Kochi Industrial Water Supply Project to sell 200-250 mld of water to "industries and other important establishments in the Kochi-Alwaye belt" (8). The project envisaged giving the promoters rights to take the required quantum of water from the river Periyar at a point 1.5 km upstream of Alwaye city's drinking water scheme. The project was put on hold after activists protested the earmarking of water for industrial purposes when drinking water needs were yet to be fully met.

Industrial consumers too weren't very keen on the idea. The project would have required the highly polluting and water-intensive units in the Edayar-Eloor belt along the river Periyar to pay Rs 15-Rs 22 per 1,000 litres of water. Currently, the industries draw water from the Periyar free of cost. Stretches downstream of the industrial belt are heavily polluted due to effluent releases by the Eloor-Edayar industries.

Bleak future

If the preferential allocation of water to high-value and industrial sectors seems to form the logic of government decision-making, other examples confound that. In all, hope seems totally unwarranted. New schemes, projects and development plans announced by state governments nationwide ignore the existing water needs for drinking and agriculture, and earmark scarce water resources for elite projects, or for activities that will degrade or waste existing water resources.

The controversial Bangalore Mysore Information Corridor (BMIC) Project envisions the acquisition of 21,000 acres of agricultural, forest and wetlands, including for a golf tourism township along the Cauvery. Nandi Infrastructure Corridor Enterprises, a consortium of small-time entrepreneurs, will develop the corridor, including the construction of a four-lane (expandable to six), walled, toll expressway and five townships between Bangalore and Mysore (9).



Alessandro Marongiu

The project will divert 2,000 million cubic feet of Cauvery water from other already stressed sectors such as agriculture and drinking water. The Bangalore-based NGO Environment Support Group fears that “extraction of water from the Cauvery would increase tremendously to support the lavish lifestyles that would be characteristic in all of the BMIC townships”.

Software engineers and the IT industry don't come cheap. They seldom go anywhere that does not guarantee uninterrupted water, fast roads, quality housing and a heavily landscaped environment. Given their penchant for using water liberally, IT industries are not the right investment for water-starved cities like Chennai and Bangalore.

But Tamil Nadu's IT policy notes that, “in the year 2004, more than 40 IT parks in the private sector in Chennai have been cleared, totalling an area of 8.5 million sq ft. Out of this, 1 million sq ft is already built and occupied. About 6 million sq ft is expected to be ready by 2005”.

Mahindra City, a project involving Mahindra & Mahindra again, comes “completely packed with high-end infrastructure — six-lane roads, stable power, unlimited bandwidth and abundant potable water enabling investors to set up operations with ease” (10).

The opening up of commercial IT complexes is expected to increase the number of newly-arrived high-income households in the city, adding significantly to population in the mid- to high-income bracket. Unlike factory workers whose needs are modest, IT workers sport lifestyles that can tax even bountiful ecosystems. Mahindra World City, for instance, is spread over 1,400 acres of land “set amidst hills, forests and lakes,” where business is “complemented by an exclusive lifestyle which would include premium housing within walking distance from the place of work and modern social amenities providing the occupants...a whole new way of life” (11).

Tamil Nadu Industrial Development Corporation, one of the IT corridor promoters, declares on its website: “Abundant water supply is assured by the park. Requirement is adequately met from groundwater sources and from approved government sources (12).” A lake falling within the property to be developed as an IT corridor will be readied for water sports, according to a note by a state industrial corporation called SIPCOT.

A research study coordinated by IIT Madras, involving town planners and architects, including from Anna University, affirms that the Chennai IT corridor is not sustainable for a variety of reasons including the aspect of “overexploitation of groundwater resources which may induce a saline intrusion” (13).

Meanwhile, Mahindra's website sells a different city from the one Madras is familiar with:

*A city...
Where lakes and forests meet undulating hills,
Where roads are six-lane expressways,
And infrastructure is plug-n-play.
Where every room in the office comes with a view,
And home is just a walk away.*

The IT corridor may bring in more revenue to the state coffers. But it will aggravate the water crisis of one of India's longest-suffering cities.

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Privatisation: Getting to the bottom of a muddled debate

Let's face it: water *is* a commodity. There's nothing wrong with privatisation *per se*. The debate gets muddled when we fail to see the difference between the privatisation of water, which implies ownership of the resource, and the privatisation of service delivery, such as the purification or distribution of water

VIJAY PARANJPYE

BASIC ECONOMICS IS NECESSARY to understand water issues in India. Firstly, let's accept that water is a commodity. Though many people think of it as a public good, water becomes a commodity once an investment is made in it. Rights over water do not preclude private investment. Water flowing in rivers, with people using it for drinking or for bathing, is not an economic good. Till such water is impounded, regulated, improved or in any other way added to in terms of value — either by the government or any private party — it remains a social good. When, say, a municipal corporation invests in water either to improve its quality or its availability, a price is charged. But the price is not for the water but for providing the service. For instance, rainwater, when it falls in my field, is a public good since neither I nor anyone else has invested in it. No one has bought it, no one has sold it. It becomes a commodity either when someone adds value to it, or when it is owned by that person legally and that person is willing to sell it.

All surface water in India is a public or social good owned and controlled by the state. Groundwater, on the other hand, according to the Constitution and existing laws of the land, is a private good. This is an anomaly, but such anomalies and contradictions do exist in India and in fact everywhere. Although groundwater is the result of the same source as surface water, once it goes under the ground on my property it is my water by law. So if I pump out my water and decide to sell it, this is a form of privatisation.

The right to charge a price for it accrues to me not because of the intrinsic value of the water but because I have invested in making it available from a location where it is available to another place where it is not available. This is "value added". I am charging a price for making the water available, not merely because it exists. This logic applies to all water supply, be it drinking water, industrial water or water meant for agriculture.

Ownership, privatisation and contractual arrangements

Privatisation is related to: 1) ownership of the water source and 2) decision-making about whom to give it to and whom not to give it to, ie how to distribute it. If these two are not part of the arrangement then it is not privatisation. There is nothing against privatisation *per se*. Even in villages small groups of people get together, start up a little cooperative society, and sell and buy water. Farmer-led privatisation already exists. Groups of farmers in a catchment area invest together in harvesting or impounding water within their village. They use it on their farms

or for domestic purposes. This use requires that they charge a price, negotiated by members of the farmers' group, because they have to invest in providing the water. It is not privatisation if a society of water users or irrigators is formed along the canal, paying a price and getting a certain volumetric quantity of water, which they decide to price among themselves excluding others from using it.

Municipal corporations giving service contracts is also not privatisation. If the Pune Municipal Corporation, or any other municipality, decides to delegate a part of its responsibility for water — augmentation, distribution, drainage system, effluent treatment — to a private concern, then that in itself is not privatisation of water. That is privatisation of a *service*. Every individual in India is assured by law of a minimum amount of drinking water, a minimum domestic supply of 60 litres per capita per day in rural areas, and 125 litres per day in urban areas. In the case of rural areas, the government doesn't charge anything. The source is developed with government investment; the standpost is paid for by the government. It's all done with public investment. So the user, the consumer, pays nothing. In urban areas, the state fixes an ad hoc price.

Meeting the basic per capita requirement of citizens is the responsibility of the state. But the state has the right to charge you the cost of making that water available, while meeting a particular standard of purity. This is the cost of making it available, not the cost of the water *per se*. The cost should include the cost of impounding the water, the cost of bringing it from the reservoir to the purification plant, the cost of transporting it through distribution pipes; then collecting the drainage, purifying it to some standard, and releasing it again.

Even if water belongs to the people, people have the right to ask a company to convert it into purer water and then efficiently distribute it. A village or group of villages has the right to invite someone else to manage their water and ensure that they get it throughout the year instead of just during the rainy season.

That is why there should be no problem with privatisation as long as marginal costs are charged. It makes no difference whether a private company charges it or a municipal corporation charges it, as long as the costs are recovered. If the Pune Municipal Corporation can do it for Rs 5 per 1,000 litres and a private company can do it for Rs 4, there should be no objection to the private supplier.

Lots of private contracts are given for works related to water impounding, such as the construction of dams. This too is not water privatisation. It's a delegated, contractual relationship where a particular contractor may build a certain part of the dam/canal/spillway, just as the construction of sections of a highway is parcelled off to private builders.

The privatisation of a service function is not privatisation. When a company has been asked to purify water given by the government, to lay in a distribution system, regulate and decide who should and should not get water, the quantity to be given, etc, and when there is a predetermined, differentiated price structure negotiated between the government and the private company, then it cannot be called privatisation. Because the government holds the right to decide who must be given water and what kind of differentiated price structure should be imposed, in negotiation with the company.

This negotiation could, for instance, state that 25% of the city's population lives in slum areas and so should be given water at a flat rate that is affordable to them. The difference between that

flat rate and the cost of providing water is recovered from the rest of the population that can afford to pay. If this decision is taken by the government and accepted by the private company then, in effect, it is not privatisation of water, it is privatisation of a service.

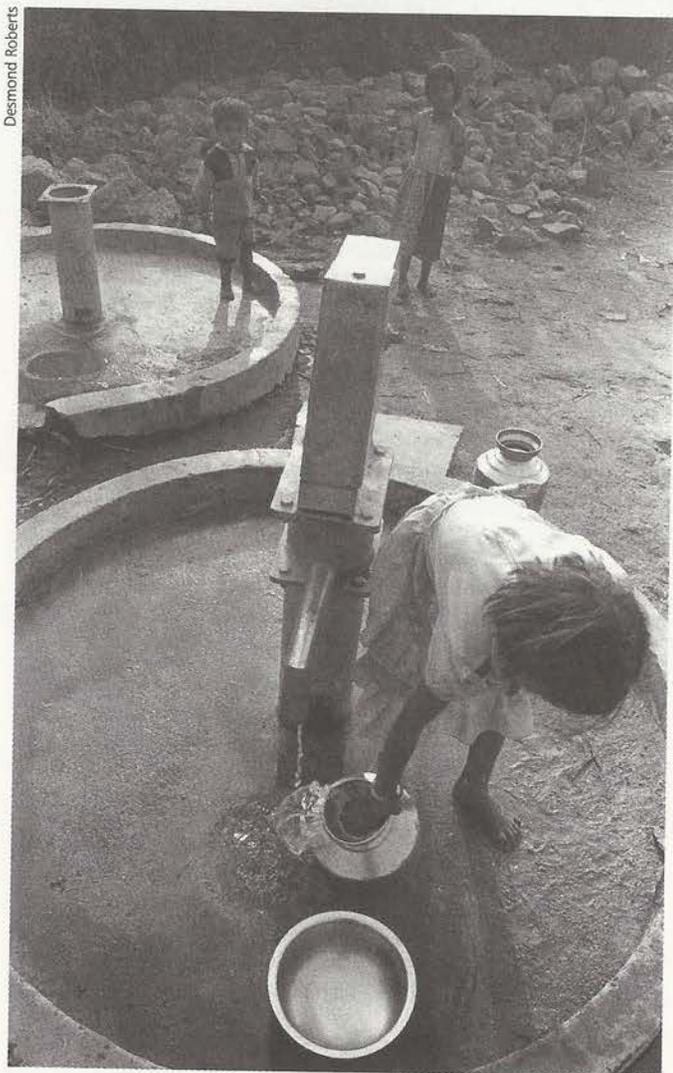
Privatisation is when the ownership of the resource is transferred and the right to distribute or not to distribute it in a particular fashion is transferred to a private organisation. Privatisation is when, for instance, a company is handed a 100-year lease of a water source, or a soft drinks manufacturing company or water bottling company is given rights over a stream for 'x' number of years to do what it wants with the water — sell it, own it at a price or at a royalty given to the government. If the company wants to price it in a particular fashion it can do so, provided it pays a price to the government.

When is privatisation called for?

Why and where does the entire debate on privatisation get muddled? In principle, all public utilities (water included) should be publicly owned and managed. Taxes are being collected for them and therefore the government has no business handing the public utility over to anybody else. Only if the government is incapable of efficiently managing the public utility, ie if it is proved that there is no way to reduce this inefficiency in the public system, then privatisation can and should be resorted to, and only if privatisation is able to reduce the costs incurred by the public.

However, public services have never been very attractive to private companies at any point in history. Take Maharashtra, where around 60% of the population still lives in the rural areas: not one major company has proposed that it manage the rural supply system. Because the company will not get the price it wants for providing the service. Of Maharashtra's 40% urban population, 25% or so lives in slums. Supplying drinking water to a slum is not attractive either, as the slum-dweller would be able to pay a very small price. The profit margins for the private company would not be worth it. With 25% of the urban populace gone, a private company or multinational is left with only the small percentage of urban population that can afford to pay, and with industries.

Even within this limited scope, urban water privatisation is attractive for companies because urban water users can be locked into the system, as in the case of Enron where users were locked into buying electricity from them or they simply didn't get it. So, private companies can charge less initially and when people are 'locked in' they start charging more because then people have no choice. A service provision becomes a monopoly. The rural user can say: "No thanks, I'll take water from the nearest stream." Urban users have no option. A local or foreign company is fine if it charges for the value-added part of its service. But not private monopolists who, to gain control over the water, will charge a lower price to begin with and then, once they control the water and the system, push up prices later. This gives them extraordinary power and profits. The problem is with the transfer of resource ownership, under the garb of privatisation.



Desmond Roberts

If the function of making water available to the poor at affordable rates is transferred to a private company, and they can do it at a price that is equal to or less than what it costs the government, it's fine. Once you accept the principle of price differentiation, and accept that poor people should be given water at a price they can afford, as it is an absolutely essential commodity for human existence, then the issue becomes clear.

A private company should have to prove and justify why it is charging a particular amount. It has to show its costs, open them up to scrutiny, and then price the water supply, with cross-subsidies for the poor.

The crux of the issue is that the state should never transfer the ownership of water; it's the ownership of *service provision* that can be given away. Otherwise privatisation will be, and should be, opposed by everyone. The subtle difference between the two is an important one. For instance, if a bottling unit is draining the entire groundwater supply because the owner has been given the right to withdraw water from a large borewell

for years, and this is leading to the exclusion of basic water in 20 nearby villages, it is not acceptable. Then, the guarantee of minimum water to those villages has to be a part of that company's contract.

The point that we keep returning to, whether it is contracts, or prices, or ownership, is that in any form of privatisation the government has to play a strong role. It has to set the conditions and maintain standards. There must always be a strict contractual arrangement operating on the basis that water as a public utility must be available to all, with no exclusions.

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Only 10% of water services worldwide are privatised

In spite of the near constant discussion in India over the privatisation of water, only about 10% of water services are privatised worldwide. And most of this is in Europe, home of the largest multinational water corporations.

The idea of water privatisation is a European one (mostly France and the UK), where, historically, water in big cities was often provided by private operators. This also explains why the biggest water companies — Suez, Veolia and RWE — are from Europe. In other countries around the globe privatisation is rare. That bastion of the free market, the USA, actually prefers to keep its water utilities in public hands, with just about 5% of the country's water supply in the hands of private companies. If you include operations and management contracts, the figure goes up to 15%, which is still not very high. In fact, one of the most celebrated cases of a city wresting back its water supply from private companies occurred in Atlanta in 2003, when the town took back its water supply after four years of it being run by United Water. The other classic example is Grenoble, in the home of privatisation, France, where it was discovered that the French water multinational had got its contract through bribery. Two company executives and the former mayor were convicted of corruption and given prison sentences in 1995, after it was found that a 25-year water concession had been awarded to a Suez subsidiary in exchange for contributions to the mayor's electoral campaign. Incidentally, this is the same company that will be operating the Sonia Vihar plant in Delhi.

Other classic cases of the failure of water privatisation come from opposite corners of the world — Bolivia and the Philippines.

In 1999, following pressure from the World Bank, the government of Bolivia handed over the water supply of the city of Cochabamba to a consortium led by the giant US Bechtel Corporation. When Bechtel doubled, and in some cases tripled, the price of water there were protests. To control them the government brought in the police, sparking off violence that ended in the deaths of six people. The governor of the province resigned after trying to convince the government to rescind the Bechtel contract. Meanwhile, the protests continued to spread and the whole country seemed on the verge of shutting down. The central government had to declare martial law and a state of emergency. The protests carried on until finally the government cancelled the Bechtel deal.

After it was forced to leave, Bechtel filed a \$ 25 million legal action against Bolivia, although international public pressure has convinced the company to drop the claim. Right now, Bechtel is being criticised for its unsuccessful attempts to build water infrastructure in Iraq.

At the end of 2002, Maynilad Water decided to terminate its water contract in Manila, the Philippines. The contract ended when Maynilad, a company made up of Suez and a local industrialist, could not convince the government to allow it yet another rate increase after six earlier ones were allowed in just five years of operation. Unable to raise more capital because of its already high debt, Maynilad pulled out of its contract.

When they started in 1997, the 25-year lease contracts were the biggest water privatisation projects in the world. Oddly enough, the World Bank and the companies involved insist that the privatisation was in fact a success story because of the number of people it connected. But the figures have been contested by regulators and civil society groups that have also criticised the non-democratic privatisation process, constant rate hikes and large numbers of urban poor still unserved. — **Manoj Nadkarni**

Why privatise?

Why is privatisation thought of as an option at all? The reason is economics, more specifically the idea of 'cost recovery'. In most cases the first step has already been taken. The formation of municipal corporations and water or electricity boards is an attempt to 'corporatise' infrastructure, run it along business lines and take it away from being a government institution, hence away from political influence and bureaucracy, both more interested in self-preservation than in delivery.

But, in all cases, it must be made clear what it is that is being privatised. Though understood as 'water privatisation', rarely, if ever, is the water itself being privatised. Water is always free. It is the *provision of water*, meaning the collection, cleaning up, storage, distribution from its source to end users, and then the drainage of used and dirty water, that is costly.

Cost recovery is important for two reasons. The first is the expense of water provision, ie, the cost of collecting water, treating it in huge and expensive water treatment plants, pumping it through large pipes and then smaller pipes until it finally reaches the household. Pipes have to be laid every time someone builds a house or a new colony comes up. Already Delhi has a 9,000 km pipeline network for its 1.3 million-plus water connections.

The second aspect of cost recovery is important from the point of view of the environment. Water, even if it is free to the individual, is needed not just for people's everyday needs but for agriculture, by other plants and animals, for people who may live downstream if it's taken from a river. Every time someone uses water, something or someone else does not get his share. And when a person 'finishes' using it, what happens to it? What isn't actually ingested goes back to the environment, usually polluted with soaps, detergents, other household cleaners, pesticides, pathogen-ridden faeces and urine from toilets, bits of food and other contaminants. These pollutants are the 'cost' of the water to the environment. This cost is translated into money terms by the government and included in the cost of water. Or, it should be. Most of the water in Delhi comes from the Yamuna river or its riverbed, yet as the Central Pollution Control Board often points out, the Yamuna at Delhi actually has no water, just sewage, since so much is taken out and only sewage dumped back in. Hence, in real terms, water from the Yamuna is getting more and more expensive, a fact that is more noticeable in the downstream town of Agra than in Delhi.

Related to both these aspects of cost recovery is what is euphemistically called 'non revenue water' (NRW) — water that is not actually accounted for in financial terms. This ranges from leaks and seepage, to water that's stolen by individuals or organisations. That obvious water leak that is slowly flooding the road because of a broken water pipe is NRW, as is the family living on the street collecting drop after drop of water from a faulty valve for their drinking. In Delhi, NRW is estimated to be up to 50%.

Cost recovery means that all these aspects are added to the price of water. However it is done, it needs to be done so that services can be extended and expanded, especially to the poor who may not be able to pay for them. In India, Mumbai is the only city that comes close to full cost recovery of water supply. In an ideal situation, water rates, connection charges and taxes specifically taken for water would take care of this. But even this usually does not cover the total cost of water provision, so governments usually 'cross subsidise', taking money from other sources like industrial taxes or rent to pay for it. But cross subsidies can take you only so far. Right now the Delhi Jal Board has loan liabilities of around Rs 4,000 crore.

Lack of cost recovery is political. It may happen when a government is either afraid to take decisions that may cost it some votes, or, for the same reason, refuses to follow through once a decision is taken.

Despite this there is still no need to bring in private agencies, as governments can quite easily meet their cost recovery requirements. In India they can't because the sudden jump in tariffs would make sure that any government that tried to recover costs would immediately be voted out of power. The jump would actually be quite massive, because some of the pricing decisions should have been taken a long time ago. The Delhi Jal Board figures are illustrative. Its total yearly revenue is approximately Rs 250 crore, and it spends Rs 370 crore in the same time period. And let's not forget the outstanding debts mentioned above.

One of the reasons for this is the bloated bureaucracy; the other, politics. Delhi is one of the richest cities in India, yet Delhi's water tariffs are amongst the lowest of all Indian cities.

Still, the notion of privatisation rankles. It is as if one were giving up sovereignty over a vital resource. This is a question of representation, asking whose side are you on? A private water company does things to make profits for its shareholders. A municipal corporation is supposed to be doing things for its citizens, while a private company wants a return on capital and the minimisation of risk. In every city where public utilities have been successfully privatised — whether it is gas, water or electricity — certain institutions are required to be in place. Only if there is a regulatory body in place to oversee the operations of the private company can the needs of citizens and shareholders coincide. But the regulatory body itself has to be transparent and beyond government or industry manipulation. Water privatisation does work in many cities in the west — cities where government accountability, transparency, citizen involvement, financial watchdogs and good regulatory mechanisms historically exist to ensure that the water utilities work to the advantage of the people. Of course, if we had government accountability, transparency, citizen involvement, financial watchdogs and good regulatory mechanisms, plus enforcement, in any Indian city we wouldn't need to privatise our water utilities, they would work perfectly fine as public services! — MN

We can do it ourselves, who needs outsiders?

Water privatisation is often bandied about as total divestiture of water and water infrastructure to a profit-making company. But it need not be like that. Local management and financing is another kind of 'privatisation'; and it can work. What privatisation is really about is taking utilities out of the hands of corrupt, bloated bureaucracies and putting them in the hands of those who can best manage them, providing good services in sufficient quantity and quality, and enjoying enough cost recovery to finance expansion, as towns and cities grow. The promise of privatisation is not just financial efficiency but also the related investment, either by the company itself, in return for guaranteed profits, or by the state paying the company to build and manage assets. Yet, there is a wide range of ways to get things financed, starting with entirely public money from taxes, tariffs and rent, to entirely private funds, or any combination in between. There is no need to bring in big foreign companies; both management and financing can be done locally. Alternative strategies are a real possibility on the small scale, one that can cancel out the need for privatisation.

Take the **Orangi Pilot Project** on the outskirts of Karachi, Pakistan. Like other slum localities in Pakistan, the 1 million people of Orangi lacked every civic amenity until 1980. Then, Orangi became known internationally for its sanitation programme, in which the people built, installed and managed their own sewerage and toilets. Later, a successful self-financed local water distribution system was put in place. This, by people who private or municipal contractors would say could not afford their own water supply or sanitation. The people's strategy was to minimise external support and help households achieve their own local development needs; they have always made a point of not taking loans from the World Bank or other large donor organisations to subsidise their work.

An example from Kerala, India, shows that if citizens work together there is no need to depend on MNCs. In the 1980s, in Kadalundi panchayat, Kozhikode district, the gram panchayat commissioned the first piped water scheme in 1987, in Vettuvodankunnu ward. Later, five neighbouring families in the hamlet of **Kambili-Paramba** pooled resources and installed a small 1 hp pump. In these cases the water supply was built around a well, the pump set, an overhead storage tank and a gravity distribution system. Encouraged by the initiative and supported by the panchayat president, 54 other households in Kambili-Paramba got together in 1989, and, with contributions of Rs 4,500 each, formed a registered cooperative society to provide drinking water for their own needs. In what should be a lesson to city governments all over India, the panchayat shifted from being a provider of services to a facilitator and regulator, ensuring that people work together and that there are no losers, everyone wins.

Households that join up later have to pay double the original

cost since there is no risk involved and since most of the work has already been done; poorer families can pay in instalments. All users bear the operation and maintenance (O&M) costs, including the cost of hiring a pump operator and electricity. The society makes sure there is money in reserve for repairs and maintenance. The due date for monthly payment is the end of the month, but payments are accepted till the 5th of the next month, with a fine. If payments are further delayed, supply is disconnected.

Although these are both small-scale instances, two other examples indicate the possibilities for metros. The first is that of **Dhaka, Bangladesh**, a city of over 10 million people. When the threat of privatisation loomed large, workers at the DWASA — Dhaka's water supply utility — actually bought out the corporation and ran a section of its operations as a cooperative. The employees' cooperative clearly outperformed both the DWASA and private contractors who were given a neighbouring area. In the cooperative zone, revenue increased substantially and non-revenue water decreased. One of the first things the cooperative did was double the salary of its staff, ensuring their integrity and active participation. It became a real cooperative, with staff pooling their experiences and knowledge. Consumer satisfaction was high, and the poor also benefited from poor-household connections that were earlier prohibited by the DWASA. Nearby, the private company performed poorly because of lack of experience, top-heavy management and a failure to draw on grassroots knowledge. After the first year, the second zone was also handed over to the workers' cooperative.

Finally, SAGUAPAC (Cooperativa de Servicios Publicos Santa Cruz) has provided water since 1979 to the people of **Santa Cruz, Bolivia**, whose 1 million population automatically become members of the cooperative formed to supply water. Santa Cruz has nine water districts, each of whose customers elect members to the administrative board of SAGUAPAC, which, in turn, appoints the general manager and approves tariffs to ensure that all costs are recovered from the water users. The cooperative charges a lower price for the first 15 cubic metres of water consumed per household every month; those failing to pay are not disconnected. Consumers also elect a separate supervisory board that monitors the performance of the administrative board. SAGUAPAC has consistently been regarded as one of the best-run water companies in South America, as seen in the low level of non-revenue water, few employees per 1,000 water connections, growth from 70 to 100% metered connections, 80% water coverage despite rapid population growth, and 24-hour water supply.

After studying the Santa Cruz experience even the World Bank has admitted that cooperative solutions can be superior to either public or private approaches to utility management. The Bank praised Santa Cruz for its "efficient and transparent administration that appears to have virtually eliminated corruption". — MN

The politicisation of water

It is greed that lies at the heart of water conflicts. Agreements, accords and treaties may temporarily bring peace, but the conflict will erupt again unless we re-define 'development' and learn to view water as a scarce and precious resource to be conserved, protected and used with extreme economy

RAMASWAMY R
IYER

WE OFTEN TALK about the 'politicisation' of water issues, but it must be recognised that water, as a basic life-support substance and as an important factor in livelihoods, is bound to figure in politics. The absence or shortage or poor quality of water in an area is a legitimate political issue. However, water or any other matter can be said to become 'politicised' in a negative sense when political calculations (unconnected with the issue in question) tend to influence and distort policies and decisions and render rationality difficult. Water seems more liable to politicisation in this sense than most other matters.

Consider urban and rural water supply. Planners tend to project future water requirements on the basis of certain norms (litres per capita per day, or lpcd); they want to raise the norms from present levels, and if necessary, bring the 'needed' water from distant areas. In fact, the actual supply (say, in Delhi) is very skewed, with some sections and areas getting barely 30 or 40 lpcd and others getting more than 400 lpcd. Without raising the norms (perhaps even with some reductions in the norms) it should be possible to improve supplies to the ill-served areas and groups and bring down the consumption of affluent areas and groups. It should also be possible to make the affluent pay the full economic price for supplies (and perhaps a penal price for use over a certain limit), charge the poor at lower rates and supply a certain quantity of water free to the very poor. Political calculations render — or are believed to render — such changes difficult. They also seem to impede the proper billing and collection of charges for supplies, leading to the phenomenon of 'unaccounted' water (as in the case of electricity), which is a euphemism for unauthorised connections or theft.

In Delhi, and perhaps elsewhere, there is also a widespread practice of installing booster pumps on the main line, reducing water supply to others down the line and forcing them, in turn, to install pumps on the line; it appears that 'politics' or corruption or both make the control of this practice difficult.

Turning to 'major/medium' irrigation or multi-purpose projects, promises to undertake such projects play an important role in electoral politics, and their locations and important features are often influenced by political considerations. (The alleged politician-bureaucrat-technocrat-consultant-contractor nexus is a different matter, one of corruption rather than politics.) The differential incidence of the social costs and benefits of such projects on different groups, and the generally inequitable distribution of their benefits among the beneficiary groups, are part of the 'political economy' of the projects. A special case,

namely the head-reach/tail-end conflict in an irrigation command, tends to become political as the two groups organise themselves and exert pressure on the irrigation department: one of the two groups (generally the head-reach group) might become politically more powerful and influential with the department.

Again, the idea (often advocated) of resettling and rehabilitating project-affected persons in the command area of the project and giving them a share in the benefits of the project, and the Acts that have been passed in this regard in some states, run into difficulties in actual practice because of the resistance of those who are already in the command area: this is a political difficulty.

It is also politics that is responsible for the reluctance of most state governments to raise (canal) irrigation water charges appropriately (as recommended by many committees and commissions), creating the vicious circle of low revenues, meagre resources, inadequate provisions for operation and maintenance, poor service, and resistance to tariff increases; and their readiness to give electricity to farmers at very low rates or free, leading to the reckless mining of groundwater.

Issues of equity, power and caste relations, 'gender', and so on, arise in the context of the establishment of water users' associations under the scheme of participatory irrigation management, watershed committees for managing water-harvesting or watershed development initiatives, and tank farmers' associations (in the southern states). These involve both social and political questions.

Further, rural/urban or agriculture/industry water conflicts tend to get politicised. For instance, the conflict between the polluting industries and the farmers and other rural inhabitants in the Palar basin in Tamil Nadu has political dimensions. We are often told that in Maharashtra, sugarcane plantations get assured water throughout the year but there are acute drinking water problems in the adjoining villages: this too is a political fact, as it attests to the greater power and influence of the sugarcane lobby.

A new anxiety that has emerged in recent years relates to groundwater. The draft on groundwater has now reached alarming proportions. In many parts of the country aquifers are getting depleted and/or contaminated. There is general agreement that the use of groundwater must be regulated, but with 21 million tubewells, largely privately owned and operated

for 'self-supply' (outside the purview of supply systems, public or private), regulation is very difficult. Both law and politics are to blame here: the existing legal position makes regulation difficult, and this is compounded by political factors. Despite the existence of the Central Groundwater Authority for seven years, and some attempts at legislation at the state level, there is no real regulation of groundwater use. Some writers argue that with the numbers involved regulation is in fact impossible, but that is a counsel of despair that we cannot afford to accept. Ways and means of making regulation possible and effective must be explored. Will our politics allow that to happen?

Returning to rivers, there is general agreement that a river basin or sub-basin, as a hydrological unity, is the proper unit for planning. There is a risk of excessive centralisation here, but subject to that caution, some degree of integration or at least coordination at a basin or sub-basin level seems desirable to obviate or resolve conflicts, and this calls for an institutional arrangement or an organisation (river basin organisations or RBOs). Such organisations exist elsewhere in the world, for instance in the case of the Nile, the Niger, the Danube, the Rhine, the Mekong, and so on. Even on this subcontinent, we have the (India-Pakistan) Indus Commission and the India-Bangladesh Joint Rivers Commission. However, no such arrangements exist within India. There is strong resistance to

Inter-state river-water disputes are the most visible manifestation of water politics. In recent times we have seen the enormous importance that the dispute over the sharing of Cauvery waters has in the politics of Tamil Nadu and Karnataka. Not only has this made the dispute virtually intractable, but it has also seriously impaired the working of the constitutional conflict-resolution mechanism

the idea of river basin organisations on the part of the state governments. That resistance — which is a political factor — has rendered the River Boards Act 1956 (RBA) a dead letter. The RBA, enacted under Entry 56 of the Union List, provided for the establishment of river boards with a wide range of functions. No such board has been established, largely because no state government was in favour of such a course. In the Krishna Tribunal's Award, 'Scheme B' that envisaged a Krishna River Authority was not made mandatory and never came into operation. In the Cauvery case, attempts to establish a standing, professional-cum-bureaucratic Cauvery River Authority had to be abandoned and a political authority set up essentially as a mediating body, without any planning or managerial functions; and it has failed to perform even that limited function effectively.

Inter-state river-water disputes are in fact the most visible manifestation of water politics. In recent times we have seen the enormous importance that the dispute over the sharing of Cauvery waters has in the politics of Tamil Nadu and Karnataka. Not only has this made the dispute virtually intractable, but it has also seriously impaired the working of the constitutional conflict-resolution mechanism, and even led temporarily to a defiance of the Supreme Court. Similarly, the dispute over Ravi-Beas waters between Punjab and Haryana (with Rajasthan as an additional party) is essentially a political one. The politics of the issue became very evident with the passing of an Act by the Punjab legislature terminating past water agreements. Considerations of party politics made it difficult for the central government to take a clear stand on this matter, and it preferred to make a Presidential reference on it to the Supreme Court. Other instances include the Alamatti dispute between Andhra Pradesh and Karnataka, and the grievances that Kerala has over the old agreements with Tamil Nadu on the Mullapperiyar and Parambikulam Aliyar projects.

In the international arena, water relations are important components in (and determinants of) India's political relations with Pakistan, Nepal and Bangladesh. There is a complex interaction between water issues and political relations between countries. It is not always a case of conflicts over water resources leading to a worsening of political relations, though that does happen on occasion; it is more often a case of a difficult political relationship rendering the water issue more intractable. This is particularly so when other issues become prominent from time to time. Water issues in turn can become the most dominant factor at certain times, and can have a decisive impact on the general political relationship.

The Ganga waters issue became heavily politicised in the wrong sense (more in Bangladesh than in India). Politicisation also plays a part in the intractability of the differences that emerge under the seemingly successful operation of the Indus treaty between India and Pakistan. Again, if the Mahakali treaty between India and Nepal has become virtually inoperative, the cause lies less in water-related issues than in the complexities of the political relations between the two countries. In particular, the 'big-country/small country' aspects in India-Bangladesh and India-Nepal relations tend to cloud the water issue.

A comment often made in this context is that it has been easier for India to resolve issues and enter into treaties with Bangladesh and Pakistan despite uneasy political relationships, than to resolve inter-state river-water disputes within the country. This apparent paradox is easily explained. The Indus treaty was signed at a fairly early stage in the history of India-Pakistan relations; it might have been much more difficult to enter into such a treaty after the 1971 war in the east or the worsening of the Kashmir issue and the escalation of violence in the late-1980s. Besides, mediation by the World Bank also played a role. In the Ganga waters case, there were new governments both in Delhi and Dhaka in 1995, and they were determined to improve political relations between the two countries. The perceived importance of better India-Bangladesh relations tended to over-ride the seemingly intractable differences over water-sharing, and led to the Ganges Treaty of 1996. No such positive extraneous (ie non-water) factors operate in the domestic context to mitigate the acuteness of the water conflict; on the other hand, negative forces (namely those of party and electoral politics) do operate and make the water conflict more difficult to resolve.

There is one positive factor that must be mentioned here, namely the constructive role played by non-official or 'Track II' initiatives in the processes that led to the Ganges Treaty of 1996 between India and Bangladesh. A similar non-official initiative has been undertaken by the Madras Institute of Development Studies to bring the farmers of Karnataka and Tamil Nadu together to promote understanding and find a way out of the impasse on the Cauvery dispute. It has generated much goodwill and helped to remove or moderate misperceptions and misunderstandings on either side, though no specific water-sharing proposition or formula for difficult years has emerged from this process as yet. Such initiatives help to counter the harmful effects of politicisation to some extent.

However, the intractability of such water-related conflicts cannot be attributed entirely to 'politics'. Political calculations doubtless vitiate the issues, but their political importance in turn often arises from deeper factors. Conflicts over water arise because of claims and counter-claims. In the Indus waters case, each side (India, Pakistan) wants more water than the Indus treaty gives it. In the Ganga case, before the Ganges Treaty was signed, each side (India, Bangladesh) used to lay claim to the totality of flow in the river in the crucial period (the leanest part of the lean season). In the Ravi-Beas case, Punjab feels that its water is being taken away by others, whereas Haryana and Rajasthan feel that their allocations are under threat. In the Cauvery case, both Karnataka and Tamil Nadu want a larger share of the waters. In the attempts at conflict-resolution, the stated claims are taken and some kind of a compromise is worked out. But how much water do the parties in question really need?

That is not an easy question to answer, but it can be said without fear of contradiction that there is substantial mismanagement of water by all parties in all these cases. With better water management it seems probable that each of the contending parties can make do with much less water than it

thinks it needs. Another point is that supply creates demand and necessitates more supply. The availability of irrigation water leads to the adoption of water-intensive cropping patterns (for example, paddy in Punjab where it was unknown earlier, multiple crops of paddy in the Tanjavur delta in Tamil Nadu, sugarcane in Mandya in Karnataka). More water is needed to continue with this kind of agriculture. And of course, things cannot stand still: there is a desire to expand that agriculture, creating a demand for still more water, until the demand becomes unsustainable. There is always a demand for more water and still more water. So Karnataka and Tamil Nadu fight over the Cauvery, and Punjab terminates all water accords.

But where will this 'more water' come from? It has to be brought from somewhere. So, big dams, canals and long-distance water transfers are planned. These will in turn generate new conflicts. It is clear, then, that what lies at the heart of water conflicts is 'greed' (to borrow a word from Mahatma Gandhi). Agreements, accords and treaties may temporarily bring peace, but the conflict will erupt again unless we learn to re-define 'development'. That is a much larger theme and cannot be gone into here, but a point of some relevance to the present article is the following.

Many of the problems mentioned above can be mitigated to some extent through legal or institutional changes. Without trying to tackle politics head-on, laws, institutions and procedures can be introduced, that cumulatively and over a period of time will have the effect — to some extent — of insulating policies and decisions from improper or undesirable political influence. However, that is not enough. Over and above such 'governance' changes, a major transformation of our thinking about water is needed. Indeed, it is doubtful whether the legal, institutional and procedural changes will work beyond a point without such a transformation.

That transformation would include an awareness and understanding of water as a scarce and precious resource to be conserved, protected and used with extreme economy; an integral part of nature; a sacred resource; a common pool resource to be managed by the community or held as a public trust by the state; primarily a life-support substance and only secondarily anything else (economic good, social good, etc); a fundamental human and animal right; and a bounty of nature to be gratefully and reverentially received and shared with fellow humans (within the state or province or country, or beyond the borders of the country), future generations of humans, and other forms of life. It is of course much easier to build a dam or drill deep for water than to undertake the kind of education and social mobilisation that the transformation outlined above calls for. However, such a transformation seems inescapable. If that kind of thinking could be brought about, it would change the nature of water politics, eliminate water-related conflicts (between uses, between areas, between countries) or make their resolution easier, make water governance more enlightened, and transform the relationship between the state and civil society.

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Rural distress, urban greed

Gandhian and environmental activist Anupam Mishra has watched closely the ability of local communities to build and sustain ingenious systems for life-support and resource management. He has also watched the state usurping those resources. In this interview, he discusses what happens when, in the race to modernity, the autonomy and rights of the people are abandoned

SUNETRA LALA



Gandhian and environmental activist Anupam Mishra, who has spent decades in the field of environment protection and water conservation, analyses the collapse of our water management systems, the growing rural-urban divide, and the failures of government policy on water. Winner of the Indira Gandhi National Environment Award, Mishra has been

associated with the Gandhi Peace Foundation since its inception. He has authored two books on traditional water management and water harvesting systems in India, titled Aaj Bhi Khare Hain Talaab (Ponds are Still Relevant) and Rajasthan Ki Rajat Boonde (The Radiant Raindrops of Rajasthan). Here he talks about the relevance and need for a community-driven water management system.

You have spent so many years working on water management at the grassroots. What do you consider the most daunting problem in the water sector today?

Acute shortage of water is the most daunting problem facing both rural and urban populations today. Nature still gives us as much water as it always did, but in the last 10 years our water management system has collapsed. We have stopped collecting water.

In rural areas, traditional methods of collecting water in *talaabs* (reservoirs) could have helped the situation, but the problem has been compounded by the fact that today there is greater water usage. Therefore, greater demand for water. We have changed our cropping patterns and introduced crop varieties that require more water.

When urban areas first came up they were self-sufficient and able to meet their own water needs. It is said that Delhi once had 350 big *talaabs* and many smaller ones that recharged groundwater during the monsoons. There were also 17 streams in Delhi, all of which recharged the Yamuna. Today, these streams have become nullahs (drains).

The problem started when land began gaining importance over water. Waterbodies were filled up and replaced by housing complexes and shopping malls. Out of the 350 *talaabs*, we are left with only five or six today. Whatever little water we once got from surface runoff has gone. All the roads in urban areas are paved; we don't even leave enough space around trees! As

a result, groundwater recharge rates have dropped drastically.

Today, both urban and rural areas suffer water shortages. But if there is a water shortage in a metro like Delhi people can afford to buy water. If there is a shortage of water in rural areas, or if waterbodies become polluted because of industries, villagers have to travel 10-15 km from their villages to access water. Most of Delhi's migrant population constitutes villagers from Bihar, Chhattisgarh and Rajasthan who have been uprooted from their homes because of acute water shortages.

Are the poor being deprived of their water rights?

Government policies seem to suggest that only the poor pollute. Slum evictions at Yamuna Pushta were carried out with this as the reason. Documentaries on pollution in the Yamuna all carry vivid pictures of dhobis washing clothes by the river. But the dhobis are washing the clothes of the entire city! It is not just the poor dhobi who is polluting the Yamuna, it is the entire city. Water from affluent colonies like Vasant Vihar in Delhi is probably more polluted, if not treated, than water from slum areas. Although there are treatment plants in Delhi they either do not function at all or do not work to full capacity.

The slums at Yamuna Pushta are now being replaced by the Akshardham temple and the Commonwealth Sports Complex. These development projects will pollute the Yamuna far more than the slum-dwellers ever would have.

There is a growing trend towards drawing water from water-rich areas of the country and making money out of it. Tankers go into these areas, lure residents with monetary benefits, and install tubewells in their localities. The tanker operators get maximum benefit out of such ventures; the residents lose out on their water resources only after a while. All the tankers that operate in Delhi have their water sources in the surrounding areas.

What are the grassroots reactions to vested interests in the water sector?

Today the reaction is one of surrender, not resistance. For years now our agricultural policies have been such that farmers are encouraged to sell their agricultural land to industrialists. In rural areas that border cities, vast tracts of agricultural land are being sold for short-term economic gain. For example, areas around Delhi like Noida and Ghaziabad were once agricultural areas. Urban expansion has always taken place on agricultural land.

Who suffers and who gains as a result of this?

In the long-term it is the farmer who suffers because his livelihood is taken away. The industrialists and builders gain in the short-term. Builders can build high-rises but they do not have access to any permanent source of water supply. The water that is available today for a small rural population will have to meet the needs of an expanding urban population with a much greater demand for water. A time may come when this water may no longer be available to anyone. After all, water that has been harvested in rural areas cannot match urban greed.

Can you suggest ways to counter this?

The paradox of our times is that when the government tries to save the environment, it ends up plundering it. For example, all industrial units operating in Delhi were asked to close down and were relocated to the surrounding areas. These are areas where farmers have invested in their *talaabs* for years to meet the needs of the villages. When industries are relocated to these areas they draw water from the *talaabs*, thereby depleting and polluting the water resources.

The Tarun Bharat Sangh has done some very good work in rainwater harvesting in Alwar district, Rajasthan. But land in those areas is now being sold to upcoming industries. Soon the government will designate it an industrial area. We can already see evidence of this in Bhiwani (Alwar), where water that was harvested for use by the villagers will now be drawn by industrialists and housing complexes. There is no doubt that the relocation of industries in Delhi will improve Delhi's environment, but what about the environment of the surrounding rural areas? A comprehensive policy must be evolved so that both urban and rural areas can co-exist in a healthy environment.

Is privatisation of water distribution systems an option?

The government seems to have become resigned to the view that the tasks it has been incapable of performing will be better performed by private institutions. A good example of this is the privatisation of Delhi's bus fleet. The private buses that were introduced did not serve the people any better. If anything, commuters face harassment every time they board a bus. They have no option but to accept these buses as their only means of transportation.

If this incompetence and inefficiency is reflected in water supply, the situation will become worse. I do not feel confident that there will be no flaws or fallacies in water privatisation.

What according to you is the alternative to privatisation of water utilities?

There was a time in our country when the ability and sensibilities of the people served to build and furnish ingenious and pragmatic life-support systems and systems for resource management; the lives of the people were fully integrated in them. But with the passage of time, the state usurped their resources. In the race to modernity, the autonomy, self-reliance and rights of people were abandoned. Ownership of resources and the rights of ownership were vested only with the

government, and all resources became capital to be exploited.

There is an example of the time when there was hardly any distance between state and society. The Chandel kings once ruled Bundelkhand (part of present Uttar Pradesh). From 219 AD-1105 AD, 22 generations of kings built 22 big *talaabs*. Jagatraj, son of King Chattrasal, heard about some buried treasure, which he got dug up. When his father learnt of this he was extremely annoyed. But the deed was already done. So the king decided to use the treasure to do good. He ordered his son to renovate the old *talaabs* built by the Chandel kings before him. Also, to build some new ones. It took 22 generations to use up all the treasure. These 22 *talaabs* in Bundelkhand are testimony to the good fortune of a society that used its fortune to make its people fortunate.

If the government today is incapable of managing the country's water resources or distributing it efficiently, it will only be a matter of time before private companies claim their own stake in this market. After all, no society can function in a vacuum. But if governments can evolve an effective water management system by involving resident welfare associations and making *bhagidari* systems more meaningful, then the power to manage water may well remain in government hands. Should the government fail to do this, private companies will play their role in the water market, leading to serious conflicts in urban areas.

How can community participation help ensure an efficient water management system in the country?

Community participation is important not only to ensure efficient water distribution but also at the decision-making level. At this level it is the communities that know what their requirements are and what needs to be done.

There is an ancient story about four brothers — Kuran, Buran, Sarman and Korai. They rose early to go to their fields to till the land. Kuran's daughter would come with lunch in the afternoons. One day, on her way to the fields, the girl stumbled on a sharp stone. In pain and anger she hit her scythe against the stone. As soon as she did this, the stone turned to gold. The girl picked up the stone, rushed to the fields and told her family what had happened. Kuran knew that the news would soon reach the king and that the precious gold would be taken away from them. So he decided it would be better to go and tell the king the whole story. But the king did not take away the gold; instead he asked Kuran to invest it in doing good — to build *talaabs*.

It's difficult to say whether this is a true story or legend. But in the Patan region of Madhya Pradesh there are four big *talaabs* named after the four brothers. In 1907, experts visiting the region recorded the story from scores of people. An on-site inspection of the four big *talaabs* identified one named after Sarman. It was so huge that it had three different villages on its banks; the *talaab* linked all three villages. It is remembered as Sarman Sagar.

Because of local communities and their tradition of building *talaabs* and harvesting water, even today, low rainfall does not necessarily mean drought.

The middle path?

The debate about water continues to be polarised between the view that water is a social good that must be dispensed by the state, and the opposing view that water is an economic good that must be treated as a commodity. Is it time to get away from the sterile debate around social good and economic good, and adopt the 'integrationist' viewpoint where water is seen as both a social and an economic need?

K J JOY
SUHAS PARANJAPE

WATER IS ONE OF THE MOST IMPORTANT requirements of life, and though terrestrial plants and animals migrated onto the land they still carry around in their bodies the salt broth that envelops all life processes and must be constantly renewed. While food provides the energy and building blocks of life, life cannot proceed without water. In India, the word *jeevan*, which signifies life, also means water.

In India, water is even more significant because in most parts of the country, especially on the peninsula, we have a short, well-defined monsoon that provides us the water we need throughout the year, especially during the summer months.

Water therefore is a basic need, and the right to adequate access to water, in quantity as well as in quality, is part of the right to life itself.

However, water is also simultaneously a component of economic activity. Every kind of productive activity requires water — directly in most cases, and indirectly in all cases. Water is therefore also an essential resource, an essential economic good. And it is increasingly becoming a commodity.

Is water a social good or an economic good? Or both? This question, essentially a political economy question, is a recent entrant in the water sector discourse and is very much connected to the onset of globalisation and privatisation in the '90s. Today it has become a critical issue in the area of water policy and governance.

Water is a strange business. Unlike many other natural resources, it is mobile. It is, in some sense, a common shared resource, like a road. But when a person uses a road it does not stop someone else from also using it. If one person uses water, another is denied use of that water. Inherent in its use therefore is the issue of competing uses: who gains and who possibly loses. Although not quite a common resource, it is classified as a common pool resource.

Yet, practically, only surface flows are considered a common resource; all groundwater is considered a private resource. Water does not respect the boundaries we use to demarcate property; it follows its own laws. Water that may fall on one private plot turns up in someone else's private well. And water that falls on someone else's plot may collect in mine to cause waterlogging. In economic terms, water creates externalities, both positive and negative. It is important to realise that from the point of view of the biophysical regime that governs water, these are not externalities; it is our property relations that make

them externalities.

Water would seem to be a local resource, and the current slogan '*Gaon ka pani gaon me*' implicitly assumes this. But every unit of water utilised in one place withdraws that unit further downstream. The entire water use pattern within a basin — and now to some extent even across basins — is interconnected; it would be wrong to treat water as a wholly local resource. Water therefore is as much a shared resource as it is a local resource. It cannot be managed at one level, it must be approached on different levels — from micro watersheds to basins and further up to states and countries. Moreover, there are asymmetries (1) involved. The most important is the one that operates on the basis of gravity; upstream areas affect water availability downstream, but not *vice versa*. Similarly, once water flows downstream it can only be available upstream by spending money, effort and energy.

Lastly, water needs to be seen as an ecosystem resource, as part of an ecosystem. Nowhere is this more apparent than with issues related to water quality. Every water user not only uses water but also returns water. How much water is returned and in what condition is crucial to the health of the ecosystem. This unfortunately is the aspect of water that receives the least attention. As a consequence, our springs of life are being polluted and water quality is deteriorating at an alarming rate.

Water, thus, is a strange and complex entity and the dualities it incorporates often result in polarised positions. Some of this complexity it shares with other resources and some it does not; some of it is ingrained in the context in which we live today and some in its intrinsic nature. Whatever it may be, a serious attempt to deal with it in its full complexity is a humbling experience and what we discuss below is more in the nature of a framework than any kind of blueprint.

Big versus small

Take the debate around big versus small. Big and small are posed as alternatives. But there is no intrinsic advantage that small systems have over big; there are numerous examples of small systems that have been inequitable, unsustainable and harmful to the environment. If the performance of large systems has been poor, small systems have not been much better off except where NGOs or farmers' organisations/movements have been able to bring about a change in perspective and functioning. For example, some years ago, the people of Chinchani (Sangli district, Maharashtra) had to resort to various forms of agitation, including a year-long

sara-bandi agitation (not paying revenue to the government), to get their share of water released from the Pare minor irrigation tank, and that too under police protection. Struggles to restructure smaller systems are as necessary as struggles against the destructive content of big dams. Unlike in the case of large dams, in the case of small systems the fight is against the powerful within the village itself — the tragedy is that very often environmentalists and advocates of small systems do not realise the significance of such struggles and do not want to go beyond the big versus small controversy. In fact, the problem is not really one of big versus small sources but of how the big and the small relate to each other and how they both relate to people and the environment. It is our belief that planned and used properly, large sources can support smaller, local systems and are important in increasing their reliability as well as sustainability.

For this, however, one has to first believe that big sources can benefit small and local systems when they are brought into a synergistic relationship with each other. Large sources offer two major benefits. First, for a given volume of water and a well-chosen site, large sources have lower evaporation losses, lower construction costs and smaller areas of submergence (as we shall see later, it is not the *amount* but the *nature* of submergence that is the problem with large dams). Second, large sources have a greater degree of dependability — this is somewhat like pooling risks, which decreases aggregate risk and increases aggregate dependability. The problem with big dams is the way they are planned today, which makes them instruments of centralisation and concentration of wealth and benefit, of dependence and of ignoring, bypassing and ultimately destroying local systems, including people and their livelihoods. To borrow a phrase from one of our senior colleagues, big dams are not important for *what they have done*, but what they *could have done and have not*.

Conceptually, how big sources can be utilised in this manner is simple, but it requires a change in approach and attitude in all aspects of our thinking about water sources. We describe some of this in what follows; a practical outline applied to the specific case of the Sardar Sarovar Project (SSP) on the Narmada can be found in our book (2).

The first, and most important change is modelled on the system tanks of Tamil Nadu. System tanks in Tamil Nadu are tanks that not only use the water they harvest locally but are also supplemented and refilled from major sources and large dams. An important consequence of this is the dispersal of water storage from the large source. The big dam serves less as storage and more as a means of diversion of large quantities of water, so that it may be stored in dispersed storage facilities in small and local systems.

In one stroke, this change in approach achieves a number of things. First, it reduces the need to store water *behind the dam* even as it allows large quantities of water to be used. Also since it *requires* small and local water harvesting systems to be in place, it no longer bypasses, undermines and destroys them but instead depends on them and supplements them. In such an approach, small systems have a dual role — as a means to harness local water resources and disperse buffer storage

elements for water from the large source. Local storage facilities are today limited mainly by expected yield rather than actual storage potential. If exogenous water is available, it is possible to build larger storage facilities or increase the capacity of existing storage facilities at little additional cost. Taking into consideration the fact that local systems need to be built in their own right, this synergy is an important cost-saving measure.

There is a similar change in how canals are planned. The canal network is no longer an unwieldy, overcentralised network that links individual fields to a large source; it mainly functions as 'feeder canals' planned for speedy conveyance to local storage systems. From there onwards, the local systems take over. The system becomes modular, simplifying and rationalising the system and cutting down on the top-heavy, centralised aspects.

The second important change relates to power from large river sources. Conventional thinking about hydropower plants sees them storing all the water required for power generation behind the dam and operating the plant as a peak load plant. The reduction of storage behind the dam and consequent reduction in the height of the dam would do away with a substantial portion of power benefit. The alternative is to operate the plant as a run-of-the-river (RoR) plant during the monsoon, and as a pumped-hydro plant for peak load during the post-monsoon season. In fact, this thinking can be extended to *all systems*, small and local, as well as large streams. It would lead to a truly large, dispersed generation and peak load capacity for the power sector.

There is another important benefit of this approach. An important adverse effect of present planning is the post-monsoon drying up of riverbeds downstream of big dams. Since most of the diversion of water to local storage facilities can take place during the monsoons, power generation is RoR and post-monsoon operation is pumped hydro, a major portion of post-monsoon flows can be left untouched, making for greater riparian health. In fact, similar changes in approach would also demand retaining minimum monsoon flow as well.

But by far the most important effect of the alternative approach is the reduction in submergence behind the dam; in the case of Sardar Sarovar, the alternative brings it down by almost 70% and makes the problem tractable. It makes it possible to ask for the rehabilitation of oustees in *the upstream area itself*, in their own socio-cultural milieu and sphere, and providing water from the project for irrigation and livelihood assurance in a contiguous upstream influence zone. We would emphasise here that *total submergence*, in all probability, would not be reduced. What would be expected to happen is that instead of an immensely large, continuous tract of submergence behind the dam, submergence would be dispersed. For example, in the Sardar Sarovar alternative, the *total* submergence remains the same; what happens is that we exchange submergence behind the dam with dispersed submergence.

What then has one achieved by exchanging one kind of submergence with another? Here it is necessary to recognise the importance of exchanging centralised, continuous and destructive mega-submergence with dispersed local

submergence. In the alternative approach, as illustrated in the context of the SSP, a substantial portion of behind-the-dam submergence is exchanged with an equal area of local submergence in the service area of the project. There is an independent significance of every hectare of behind-the-dam submergence being exchanged for every hectare of local submergence, which goes to the heart of the conflict surrounding most major projects being floated today. With every such exchange, the proportion of people who are uprooted *en masse* declines drastically. In fact, large, concentrated and contiguous submergence is disruptive not only to people's lives but also to the area's ecosystem.

Moreover, in the context of local submergence, the 'project-affected' do not remain an abstract, remote entity for the project beneficiaries. Project-affected people share the daily lives of the project beneficiaries; they share the same drinking water sources, the same bazaars, the same festivals; they are the same people joined by kin, sharing the same joys and sorrows. This is an extremely important context for rehabilitation. Though nothing can replace the will and capacity of the project-affected to struggle for their own demands and interests, the degree of social amity with which issues can be resolved does undergo a radical change.

It is exactly the opposite in the case of behind-the-dam submergence of large waterbodies. Not only are the project-affected abstract, remote entities — outsiders — for the project beneficiaries, the division almost always coincides with the divisions between advantaged and disadvantaged social groups, and, in a majority of cases, between adivasis and non-adivasis. It becomes a matter of one group bearing losses for the benefit of another. The resistance of the project-affected brings into play all the interests, emotions and prejudices that are dormant and not-so-dormant between them. Slowly, it turns into a dismal war in which everything goes against the predominantly adivasi people in their struggle against a misconceived project that treats their losses as inevitable losses in the interests of the 'country' or 'development'.

It is essential to realise that the issue is not submergence *per se*; it is our experience that people are much more rational in working out arrangements in a local context in which the project-affected are a part of their daily lives and the gains are palpable. The issue is that of the coincidence of boundaries between the project-affected and the project beneficiaries, and those between socially advantaged and disadvantaged groups, of the disadvantaged having to bear the losses for the benefit of the advantaged, and of that being presented as 'inevitable' in the interests of 'the greater common good', whatever that may be!

The second aspect of this alternative approach relates to the impact of rehabilitation and the question of where oustees are to be rehabilitated. It is usual for the project-affected, necessarily from upstream areas, to be given land for rehabilitation in downstream command areas. The objective behind this is laudable enough. They have to be given irrigated land from the same project, and it has to be acquired from the beneficiaries. Generally, if the oustees in upstream areas and the beneficiaries in the downstream command are bound by ties of

kinship and culture, there is a favourable environment for tackling the issue, though nothing can finally replace the organised struggle and resolve of the oustees. The less they share, the sharper the conflict becomes, and when these boundaries coincide with the boundaries that demarcate the dominant and the dominated, the better-off and the oppressed, the problem becomes intractable. The rehabilitation of oustees in downstream areas then means not only an uprooting but also their further dispersal and their entry into a hostile environment.

None of the above measures would work if the local systems were to be unsustainable and inequitable. There is no escaping the fact that ensuring a central place to small and local systems does not solve the problem; it only creates a context that facilitates its solution. Making small and local systems the basic unit of the composite system creates a basis for self-governance, of people-centred management of the water system. The state must first ensure that there is self-governance within these small systems, and, secondly, it must enable them to move towards equity and environmental sustainability.

Necessary conditions for equity and sustainability

If we have to get away from the sterile debate around big versus small, and operationalise the 'integrationist' viewpoint detailed above, then one needs also to build a broader political consensus around certain conditions under which this is possible.

There is a need to insist that, if exogenous water is to become available, both the users and the state must fulfil certain conditions mutually with respect to equity and sustainability. We therefore propose that the provision of exogenous water be conditional on the fulfilment of four conditions: a) Exogenous water will be available to local systems in proportion to the local resources they harvest and harness (in the context of the SSP alternative, for most regions we have proposed 1 m³ of Narmada water for every m³ of local resource created). This provision ensures that when exogenous water enters an area, local systems will not simply die, as happens today, but prosper. b) Equitable water access, that is, providing minimum water assurance to *all* families in the service area irrespective of landholding and protecting livelihood needs before further water is provided as extra, economic service. c) One-third of the service area to be brought under permanent cover. Unlike 'compensatory forestry' this ensures that a minimum basis of environmental upgradation is established in the *entire* service area. d) Self-management of the system by users to ensure equitable and sustainable use. This provision is as important as the others because no top-heavy bureaucracy can be in a position to fulfil these conditions. Only if the people themselves come together and exercise control can they be fulfilled.

The state too has corresponding obligations: a) Providing the requisite funds necessary to harvest and harness local resources. In the alternative, minimal watershed treatment of twice the service area is included in the *project cost* itself. The other provisions of b), c) and d) imply that the state has to enable local communities to ensure that they are sufficiently empowered to satisfy these conditions. This implies enabling

legislation, policies and incentives.

Water: A social or economic good?

Is water a social good or is it a commodity and therefore an economic good? As we have asserted above, the right to adequate access to water — adequate in quantity as well as quality — is a fundamental right and needs to be treated as part of the right to life. The issue is *how* this is to be done. Should it be provided as a free good by the state? Should it be rationed? Should it or should it not become a commodity? There are clearly two different polarised positions on this: one, that water should not become and should not be treated as a commodity and should be dispensed by the state, and two, that it should be allowed to become a full commodity and that the restrictions placed on its becoming a commodity are causing all the ills related to water. This is the core of the pro-privatisation school argument.

The problem does not lie in accepting that water is a basic need, the problem is that water is also a means of production — whether in agriculture or in industry, whether in artisanal production or large-scale production. Moreover, take irrigation. Water for irrigation is important in order to stabilise minimum production on small and medium farmers' lands, but it is also important to farmers who produce for profit rather than for their subsistence needs. In each sector when water is provided it is provided as a service, and it serves both functions — as a basic service aimed at basic needs (in the form of minimum livelihood assurance) and also an economic service for gain or conspicuous consumption. And there is always the possibility that the interests of the latter are being served in the name of the former.

Both these functions place contradictory demands on how the service should be provided and at what charge. A basic service aimed at meeting basic needs with a high degree of assurance has to be widely available and available at a price/charge that is affordable to all, including the poorest sections. If need be it has to be subsidised, whether through cross-subsidy within the sector or across sectors. On the contrary, an economic service provided for gain needs to be charged full economic cost, and, in addition, must be charged at premium rates to provide for cross-subsidy for basic needs as well as a deterrent to wasteful and inefficient use. In fact, as we said earlier, providing water to all to meet their livelihoods at an affordable cost is at the core of equitable water distribution.

This can be done through a graded tariff linked to the amount of water delivered; the higher the water consumption the progressively higher the rate it will attract. In fact, the Vaidyanathan Committee appointed by the central government in the early-'90s had recommended a graded tariff system (3). Such a graded tariff will, in the first place, discourage waste, since wasteful use will attract a higher cost. Secondly, it can then be calibrated so that the first slabs provide a minimum water assurance corresponding to minimum water rights at an affordable cost, with the higher slabs charged at higher rates corresponding to full economic cost recovery as well as cross-subsidy and deterrence.

The debate about whether water is a social good or an

economic good (or commodity) is closely linked to (or has arisen because of) the issue of water privatisation. 'Commodification' is the process of converting a good or service formerly subject to many non-market social rules into one that is primarily subject to market rules. Water privatisation means many things to many people, as it has a range of meanings. Privatisation involves transferring some or all of the assets or operations of public water systems into private hands.

Though positions on the question of water privatisation are extremely polarised between pro and against, there is also a third position — a position that says that water is *both a social and an economic good* — that is gaining ground. This position essentially argues that there could be different mechanisms of service delivery — like water users' associations, private service providers, etc — but under the overall regulatory mechanism of the state. Here the state's role does not shrink but undergoes a change from that of service-provider to that of governance and regulation. From the point of view of resource-poor sections, it is also important to see that a substantial portion of the water resource is not under the purview of the market, and here the distinction that we made earlier between basic service and economic service could provide the norm. It is important to realise that we cannot keep water completely out of the laws of commodity production because, as we discussed earlier, a part of the water resource is in any case used to produce commodities and, as a result, for surplus generation.

Peter Gleick and others argue that water can be both a social and an economic good. Access to clean water is fundamental to survival and critical for reducing the prevalence of many water-related diseases. Other dimensions of water supply also have a social good character and therefore require governmental action, oversight, or regulation. However, he also advocates the use of sound economics in water management (4). The UNCED meeting held in Rio way back in 1992 recognised water as both a social and economic good when it said: "Integrated water resources management is based on the perception of water as an integral part of the ecosystem, a natural resource, and a social and economic good (5)."

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Footnotes

- 1 Basically asymmetrical externalities and they are due to the unidirectional characteristic of ecosystem processes. For example in the case of water, upstream actions influence the wellbeing of people living downstream and not *vice versa*
- 2 For details of the Sardar Sarovar Project alternative see Suhas Paranjape and K J Joy, 1995, *Sustainable Technology: Making Sardar Sarovar Viable*, Ahmedabad, Centre for Environment Education
- 3 For details see Government of India, 1992, *Report of the Committee on Pricing of Irrigation Water under the Chairmanship of Dr A Vaidyanathan*. Unpublished, mimeo
- 4 The definitions of commodification and privatisation of water are taken from Gleick *et al*, 2002, *The New Economy of Water: The Risks and Benefits of Globalisation and Privatisation of Fresh Water*, Pacific Institute for Studies in Development, Environment, and Security, Oakland, California. For details of his critique on privatisation and also how he visualises that water can be managed both as a social and economic good and the role of the state in this, see Gleick *et al*, 2002
- 5 As quoted in Gleick *et al*, 2002

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