The alarming story of water in India is not about government negligence towards the poor, nor the urban poor being singled out for marginalisation. In fact, many praise India's efforts to provide potable water to its fast-growing population, and it may be one of the few countries to come close to meeting the Millennium Development Goals in this sector. Instead, the story is more universal and entering a critical moment; a collision of supply and demand.

Image: Peter Essick / Getty Images

Chapter 2

water insecurity
delhi: drinking the city dry

"You should come here early in the morning to see the long queues and the fights. Some women bring sticks to fight for the water. There is never enough," says Santi Singh, a Delhi slum dweller, describing a scene familiar to most unplanned settlements in cities throughout the developing world. The inevitable by-product of India's much-championed economic miracle is that an increasing number of urban and rural poor do not have adequate water or sanitation. "For us poor each year seems harder than ever. Nowadays we can only wash once every four days for lack of water," says Santi.

Cities of slums

Indian government maps are colour-coded to show the intensity of slum populations in certain cities. The intensity of slum concentration is represented by yellow turning to orange and then red for the highest density. For Bombay, New Delhi and Kolkata, most of these municipal maps are dominated by bright red and orange.

The 2001 census received reports from the 640 larger Indian cities on slums and represented the first effort to analyse slums as a population category. The definition used was "a compact area of at least 300 people or about 60 to 70 households of poorly built, congested tenements in unhygienic environments, usually with inadequate infrastructure and lacking proper sanitary and drinking water facilities." [1]

Even though the rate of urbanisation in India is among the lowest in the world, there are more than 250 million city dwellers. The population is well over a billion and is reckoned to overtake China in the next decades.[2] One in six people on Earth is Indian and experts predict that by 2020, about 50 percent of India's population will be living in cities. Already one in four in Delhi live in slum conditions while in cities such as Mumbai, the proportion in recognised slums in 2001 was a staggering 54 percent, according to government statistics.

Critics question government figures of 1.8 million slum dwellers in Delhi.[3] The real number of people in slums and unauthorised colonies, or 'jhuggi jhompris', is three million to seven million, they say. The catch for the urban poor is that unless they are officially classified as living in slums they rarely qualify for government services, including water and

sanitation. An estimated 550,000 people come to Delhi alone each year.

The long wait

On the southeastern periphery of the city, where Santi Singh lives in Kalianpuri, the water story is bleak. "When we fight we use our hands and legs and the police have to come to split us up. It's all about the water," explains Santi, a 40-year-old mother and long-term resident of the community of 10,000 huts, or 'jhuggis' in the slum. Her story is testament to India's dwindling water resources as well as the government's struggle to meet the fast-growing needs of the urban poor while meeting the expectations of the equally fast-growing middle class.

Santi, like others in Kalianpuri, migrated to Delhi in the 1970s. Women worked as cleaners in houses miles away. For the past two decades they have been told they would be relocated to an area with full facilities. "When we first came here, there was nothing. It was just open land they called jungle. But then five or six households pooled their money together and got one water pump to share. Then there was water but now it is all dry." People started installing their own hand pumps in 1982, most of them 12m to 15m deep. Ten years ago, all the makeshift houses in Kalianpuri had access to pumps but three or four years ago most dried up. A couple of deeper pumps still work but are picking up unclean water and even then availability is uncertain. "No one wants to build new pumps because the water table is still falling and the water is not clean, and putting in wells is too expensive," Santi said.

Most households in Kalianpuri rely on two tap-less water pipes flowing twice a day, for two hours at a time. Santi's stories of endless fights at the standpipes are echoed throughout India as women struggle to get their buckets under the pipes before the weak flow trickles to nothing.

Drying out

The Millennium Development Goals (MDGs) would require India to halve, by 2015, the proportion of people without access to safe drinking water and basic sanitation. The government suggests India could achieve complete access to water and sanitation in the next decade or so in urban and rural areas if current funding continues. However, access alone is only one aspect.

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The 2005 World Bank report, Bracing for a Turbulent Future, agrees India may theoretically meet the MDGs but raises issues of the reliability, quality, financial and environmental sustainability, and affordability of water.[4] In most cases, supply is erratic and the report cautions against complacency in light of increasing scarcity due to groundwater depletion, environmental degradation and climate change. The report states that unless dramatic changes are made – and soon – by 2025 three out of five aquifers in India will be critically low and by 2050 demand for water will exceed all available supply.

Urban supplies

The government claims 90 percent of Indians enjoy access to safe drinking water; the Bank says the number is nearer 40 percent, leaving an estimated 650 million without clean water. According to the Center for Civil Society in Delhi, about 10 percent have no access to piped water supply and 30 percent receive a very small supply through standpipes. Even officials admit the total distribution losses from the Delhi network of about 9,000km of water mains, some of which are 40 to 50 years old, is about 40 percent. The average is 10 percent to 20 percent in other developing countries; these losses are due to leaking pipes as well as unauthorised connections.

Although the official per capita availability of water in Delhi is still the highest in India, the overall inadequacy is due to inequitable distribution and leaking pipes. The cruel irony of being poor in Indian cities is that without a municipal supply, the poor spend disproportionately more on water. Commercial suppliers make a killing as they freely extract what they want from private wells and sell it to those not served, or served poorly, by the city.

Iniquitous distribution

"They will never share," says Saida Khan from Kalianpuri. "Yesterday I went to a neighbour's house to ask for some water to drink. Instead they threw the water at me and threatened to call the police." Her neighbours across from the slums live in flats with piped water. The unequal

People in Dhaka, Bangladesh, wash by a communal standpipe the only source of water for drinking, cooking and washing for many slum households. According to the UN, there are currently 1.2 billion people globally living in areas with insufficient water. By 2025, two-thirds of the world's population could be threatened by water shortages. Lack of access to adequate quantities of clean water and poor sanitation are probably the greatest risks affecting the lives of the urban poor.

Image: Manoocher Deghati / IRIN

Demonstrators in Mathare, one of Nairobi, Kenya's largest slums, appeal to the Millennium Development Goals as they demand water after their illegal connection was cut by authorities in August 2007. There has been much talk of conflict over water, and experts warn of future unrest between communities and even nations as the world's water resources dwindle under pressure of over-exploitation, population explosion and mis-management of resources.

Image: Julius Mwelu / IRIN

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Image: Peter Essick / Getty Images

distribution of water in Delhi, even between planned residential areas, can be extreme. In the central zone closely associated with government and the army, the average quantity is more than 500l per capita per day (pcd) and 18 times that of two large zones in the north and south of the city, which both receive on average 30l pcd. Of course for many unofficial slum settlements and jhuggi clusters there may be none at all. A household of five is considered to need at least 120l per day for basic hygiene, consumption and cooking.[5]

Delhi is in perpetual water crisis, more so during the dry season. With a population of more than 15 million, Delhi faces a water shortage of 750 million litres per day. According to the World Bank, of the 27 Asian cities with populations topping one million, Chennai and Delhi are ranked as the worst performing metropolitan cities in terms of hours of water availability per day, while Mumbai is ranked as second worst and Kolkata fourth.[6] In Chennai, over-extraction of groundwater in the northwestern coastal belt has resulted in a rapid ingress of seawater, turning city water brackish. In Bangalore, the demand-supply gap is so large it can only be met by groundwater exploitation. It is estimated that 40 percent of Bangalore's people depend on groundwater.[7]

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Groundwater extraction

As the demand-supply gap widens in Delhi, more groundwater is being exploited by individuals, industries and unregulated bottled water companies that own the estimated 200,000 tube wells. The failure of the Delhi water authority, the Delhi Jal Board (DJB), to meet the city's needs encourages private suppliers. These entrepreneurs play a significant role in filling the gap – but at a price, in terms of actual cost and environmental cost because they suck up groundwater to fill their bottles.

The emerging water market in India was valued at an annual US$2,000 million in 2003; multinationals are active in bottled water, which can cost up to 1,000 times more than tap water.

In some places in south and southwest Delhi, the groundwater level has fallen 20m to 30m below land surface. In some cases, a drop of more than 100m has been recorded.[8] The quality of underground water is deteriorating and in several places is unfit for human consumption. The Delhi Water Regulatory Commission, set up to control groundwater exploitation, is seen to have little impact and for many experts the general groundwater free-for-all, in India as well as China, is cause for great concern as the world's last ancient storage tanks are depleted at an unsustainable rate.

Community action

Inhabitants of many small unofficial slum clusters scattered around the city in the mid-1980s were relocated to what is now a thriving organised slum community at Mongolpuri and Sultanpuri.

Many had lived in hovels on open ground between middle-class areas in the city. Without official water supplies or sanitation they survived by illegally diverting water, buying it from private sellers or queuing at sparsely distributed hand pumps. Now, most of the two- or three-storied stone buildings have water, indoor toilets, an external pay toilet and washing blocks. But it did not come easily or fast.

In these slum settlements land was handed out in an organised programme incorporating numerous smaller, illegal settlements all over the city. Planned to coincide with the development of large garment factories, it was an example of pushing slum dwellers to the periphery in 'spatial exclusion', while also illustrating the government's bid to plan and provide for the large resettlement effort. How they finally got basic water provision and sanitation in the new slums is also an illustration of community action and the tenacity of women's groups. Rani and Maju in Sultanpuri said: "There used to be one common tap outside, with water coming for an hour or two each day, sometimes at two in the morning. There were hundreds of us needing water at the same time."

Furthermore, there were no toilets. "It used to be terrible with the raw sewage overflowing and seeping into people's houses. It was a disease hazard but also the smell was terrible." Sanitation is increasingly understood as a social challenge that affects women and girls far more than men. "My sister-in-law was sexually attacked when she went out to do her toilet," Rani said. "We would have to go in pairs or in groups to guard each other."

Six years ago, after 14 years of hardship, Rani and Maju, assisted by an Indian NGO, Saahas-ee, began to demonstrate outside different government offices demanding basic services. Initially their contact with government was confrontational but soon their dialogue became more constructive and the federations and local authorities found ways of working together. Soon thousands of families began getting water and waste drainage.

Now for every 24 houses there are three hand pumps dug 12m to 15m deep, and every house can apply for individual water connections at a nominal fee. Most people receive water twice a day for at least two hours. The community maintains the hand pumps and the women's federations act as manager for the DJB and collect its monthly payments.

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Saahas-ee community workers and the federations have helped to clear drains and rubbish and mobilise the community, teaching people not to let their children defecate in the streets, not to throw plastic bags into drains and other basic public health messages. "After all this struggle we all really understand the value of water and we wouldn't waste even one glass, " Maju said.

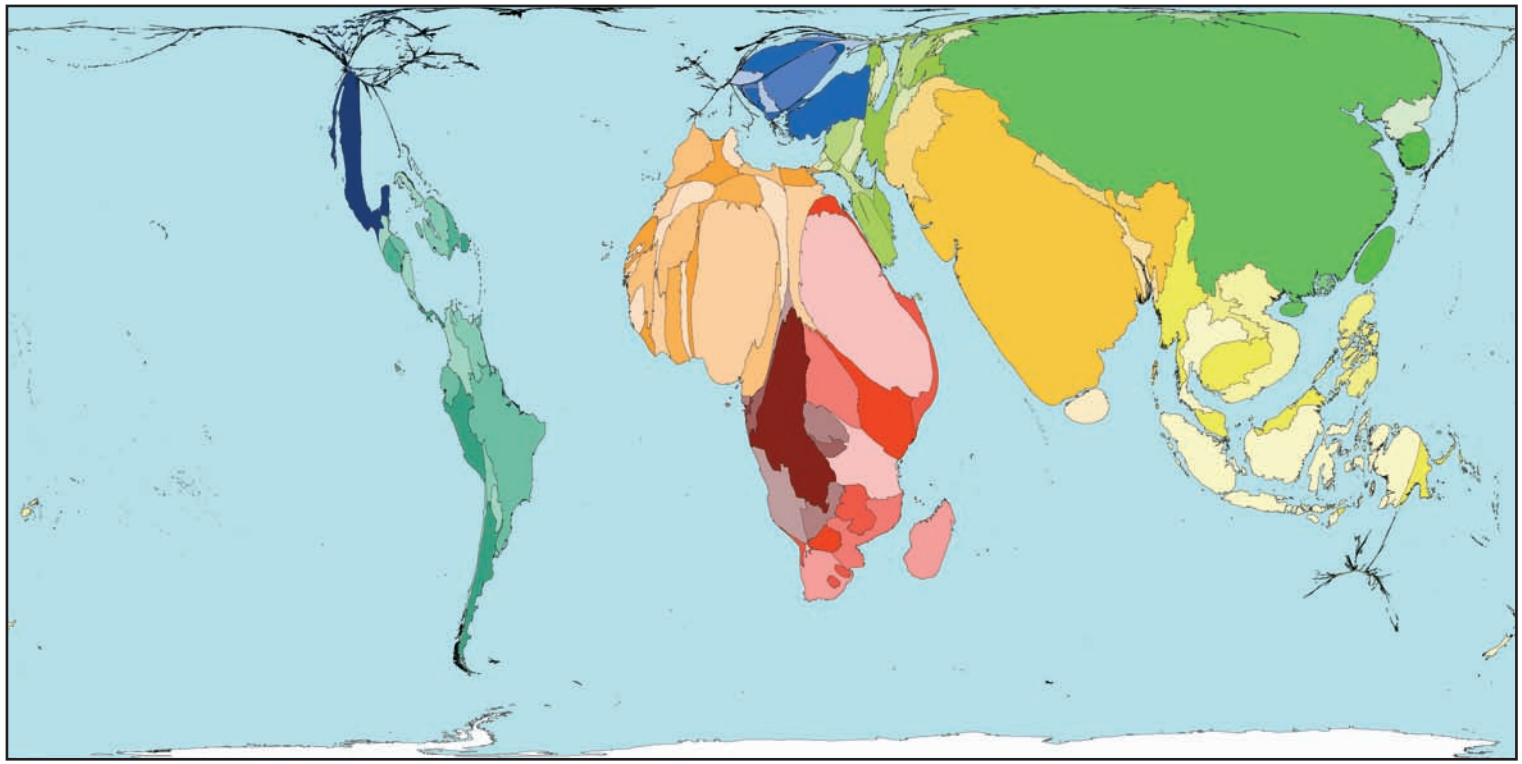
A critical moment

The story of water in India is not about government negligence towards the poor, nor the urban poor being singled out for marginalisation. In fact, many praise India's efforts to provide potable water to its fast-growing population, and it may be one of the few countries to come close to meeting the MDGs in this sector. Instead, the story is more universal and entering a critical moment; a collision of supply and demand.

According to WaterAid India, poor urban communities consistently cite water and sanitation as their greatest need. Furthermore, "there is a complete absence of systematic intervention by local NGOs that can inform the infrastructure planning and reform process."[9]

The Water Supply and Sanitation Collaborative Council – a UN body – stresses that one out of every six people in the world (about 1.1 billion) do not have safe water to drink. About 2.4 billion people do not have adequate sanitation. The council warns against misspending billions of dollars in the name of development but calls for a new approach "based on working with and trusting local communities, focusing on the needs of households and supporting the reform of governments and institutions."

According to the council, the main hurdle in the way of safe water is not lack of resources, "it is a lack of willingness to learn from past failures and to listen to those who pioneered new approaches."[10]



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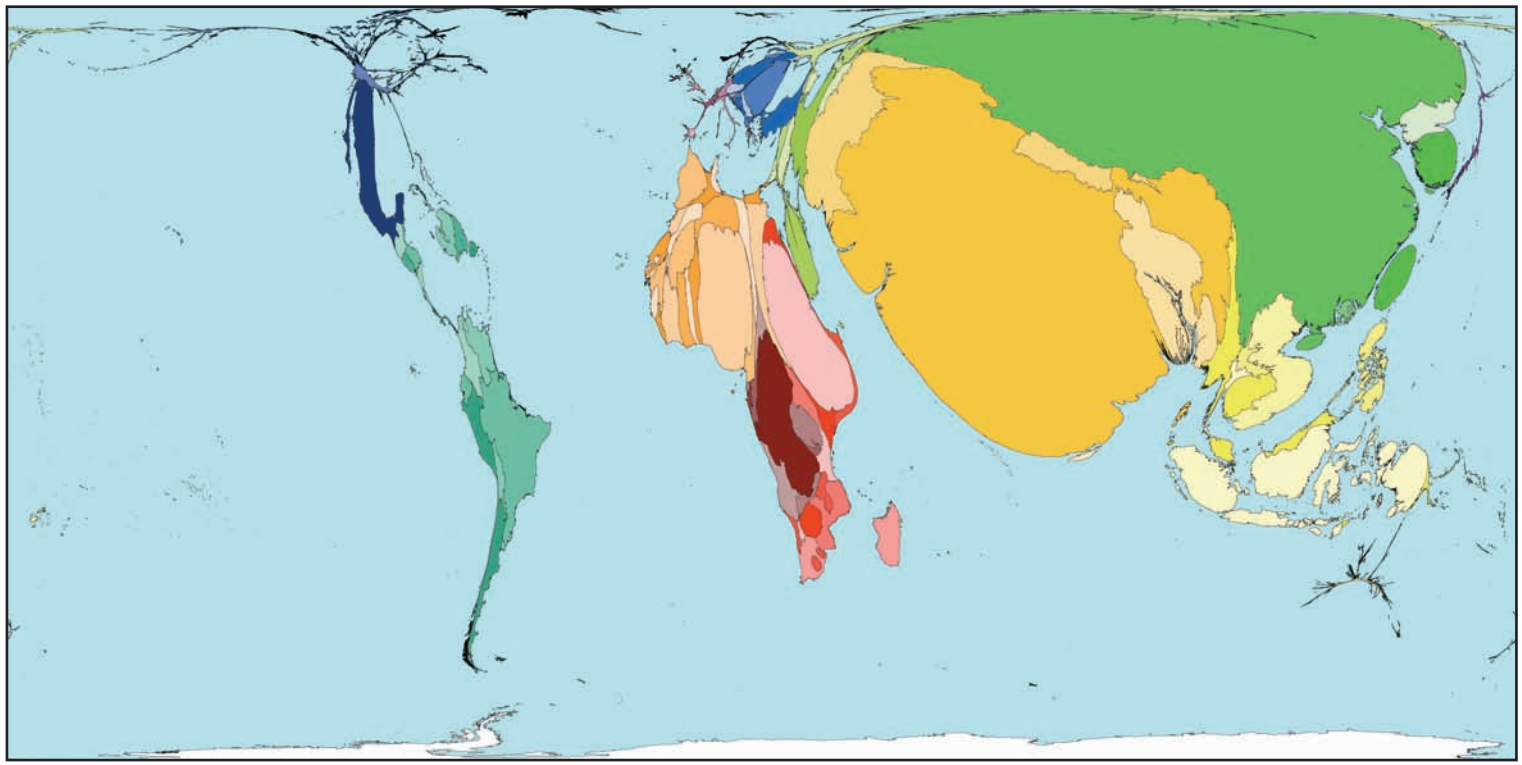
Poor water

Drinking water is essential to live, but dirty drinking water is also a major cause of disease. The largest population without access to safe tap water is in China: that is 324 million people, or 25% of the population. Worldwide 18% of people have no safe drinking water.

Territory size in this map shows the proportion of all people without reliable access to safe water that live there.



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Poor sanitation

Of all the people in the world, 39.8% of us do not have access to basic sanitation. This means living within walking distance of private or shared (not public) latrines or toilets that effectively prevent human and animal contact with excreta.

Territory size in this map shows the proportion of all people without access to basic sanitation (toilets) that live there.