

# **India, Water and Sustainable Development**

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### **Author's Note**

India faces tremendous developmental challenges, both in water and other sectors, in the next couple of decades. My three-month journey in spring 2008 was, at its core, an exploration of the myriad of complexities to providing safe and sustainable water access. I hope the images will lend an insightful introduction to the challenges of the subcontinent and inspire a desire to learn more.

Keywords: India, Ganges, Water Supply

# India, Water and Sustainable Development

## Introduction

In February 2008, I took a break from academic studies for three months of real-life study: trying to understand India's cultural, social and religious constraints to clean water access. The subcontinent has the second largest population in the world, and nearly a quarter of its peoples are lacking access to safe and reliable water.

I set out to discover and document this issue. After landing in Delhi, I traveled to Kanpu, Allahabad and Varanasi, all sites along India's most famous and—arguably—most toxic river because of heavy domestic and industrial pollution. From there, I went south to the Western Ghats and then northeast to the Kolwan Valley, where stories of complex political dynamics lived in every village. Traveling onward to Mumbai, it was a story of socio-economic inequalities. Finally I ended up in Rajasthan, where the biggest issue is also the most basic: there simply is not nearly enough water. Overall, the journey was an eye-opening exploration of India's biggest challenge in the coming decade: clean and sustainable water access for all of its citizens.

**01 Cricket: Kanpur, India, February 2008**



Kids play cricket, India's most popular sport, on the banks of the Ganges River in Kanpur. Although significantly polluted, it is still the life-source for those who live along the river. The Ganges, according to Rakesh Jaiswal of Eco Friends, is forecast to "die" in 30 to 50 years, meaning all available water flow will be allocated to different agricultural and industrial uses. This analysis does not factor in the potentially negative effects of climate change on water sources in the Himalaya.

**02 Tumblers: Kanpur, India, February 2008**

Workers at one of Kanpur's four hundred tanneries, the city's primary industry, load hides into well-used tumblers. Treating leather in this manner is a multi-step process requiring chemicals such as chromium and copious amounts of water. After the water is used, rendered highly polluted in the process, it is generally piped back to the Ganges without any treatment.

**03 Waste to the river: Kanpur, India, February 2008**

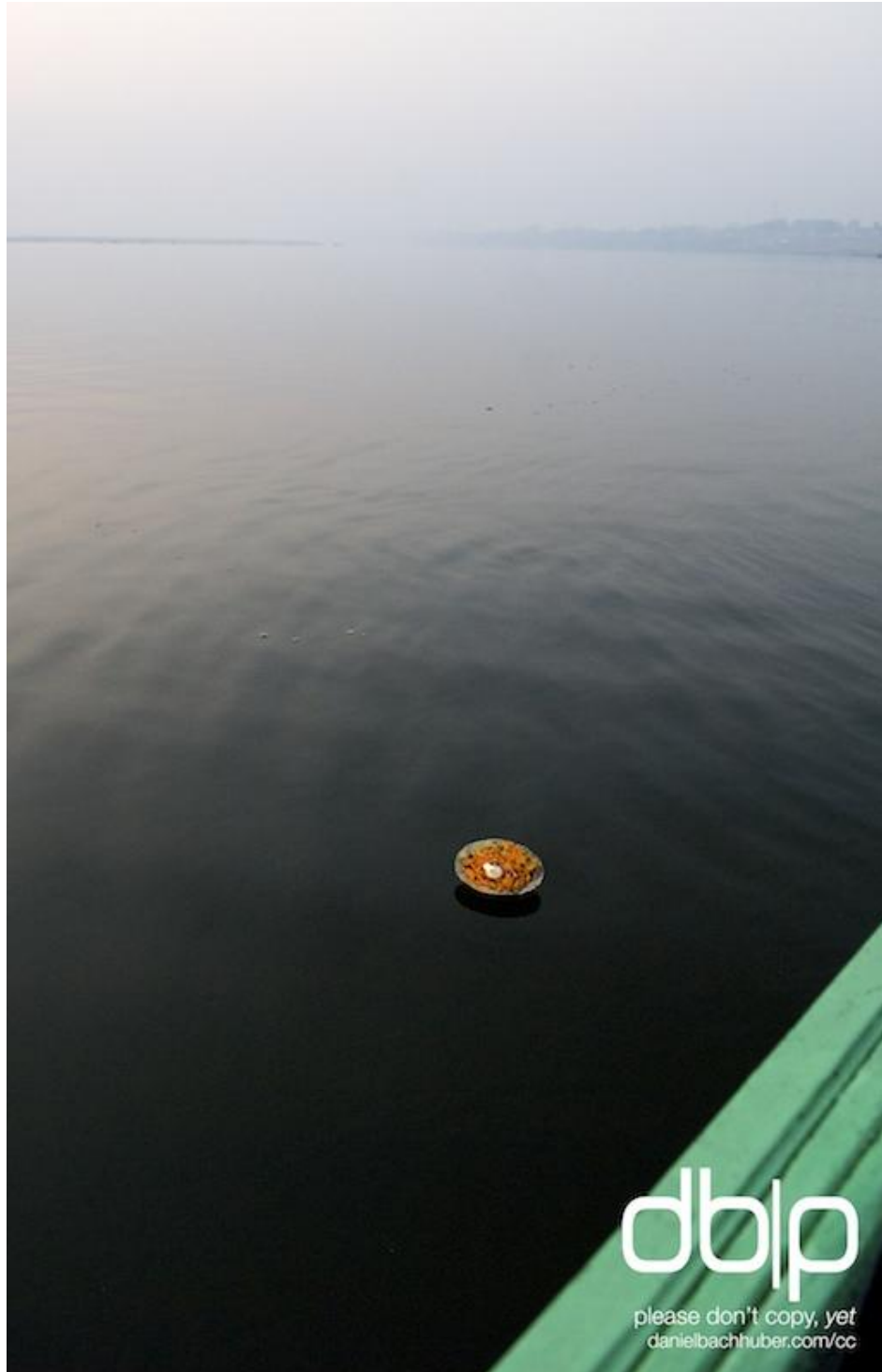
Just below the Dapka Ghat in Kanpur, a nhala, or drainage ditch, pours raw sewage into the Ganges River. The pollution is 80% domestic and 20% industrial. Waste treatment should have been addressed by the Ganga Action Plan of 1986 but, like many of India's environmental programs, it did not bear fruit because of the size of the issue and complexity of the political action required to solve it. In the meantime, the number of leather factories has jumped from one hundred and seventy-five to over four hundred, substantially increasing the amount of waste disposed in the river.

**04 Diversion: Kanpur, India, February 2008**



Fishermen drop their nets below the Kanpur Barrage, built as a part of the Ganga Action Plan to provide irrigation water for farmers. The project has since chiefly benefited the agricultural-industrial giants, while at the same time drastically reducing the flow of the river. Mohit, a local journalist, says that many stories get written about the Ganges but most Kanpurians think the situation is *chalta hai*, or alright.

**05 Offering: Varanasi, India, February 2008**



A floral diya to the gods as the sun rises over a new day. For Hindus, the "Ganga" is the holiest river in the world, offering cleansing and salvation. At the same time, this belief of piety can conflict with the scientific hard truth that the river is one of the most polluted in the world.

While on an eight hour bus ride from Kanpur to Allahabad, the man next to me said, "You should not think the Ganga is polluted; many people bathe in it and are not harmed."



**06 Cleaning: Varanasi, India, February 2008**



Children clean the ghats of Varanasi free of religious offerings by washing them into the Ganges. With up to 50,000 visitors per day to worship at Varanasi, the toll on the river from the sheer amount of material goods left is significant.

**07 Conservation: South of Kodaikanal, India, February 2008**



South of Kodaikanal in the Western Ghats, a young boy on his way to school turns off the tap the mother has left on as it fills an already overflowing jug. Children are taught conservation and environmental stewardship in school, but the uncertainty remains about what state their natural resources will be in fifteen years from now.

**08 Where the lines diverge: South of Kodaikanal, India, February 2008**



Water access is also an obvious political issue. In the same village south of Kodaikanal, enough influence in the village can get you a public tap close to your door or, in this case, a private connection off the public water line.

**09 Down the hill: Western Ghats, India, February 2008**



On terraced fields in the Western Ghats, artificial fertilizers and pesticides used to improve crop yields can get back into the water supply. Unfortunately, these contaminants then flow into the water supply of the villages lower on the hillside.

**10 Silent killer: Nanegaon, Kolwan Valley, India, March 2008**

A woman from Nanegaon in the Kolwan Valley west of Pune carries water home past the heavily-fertilized sugarcane fields near her community's open well. Sugarcane requires copious amounts of water and heavy fertilization, most commonly with a nitrate-based urea. Although not fully understood, excess amounts of nitrates have been associated with methaemoglobinaemia, a potentially life-threatening condition of depleted blood-oxygen levels, especially serious in bottle-fed infants. According to Mr. Shyam Divan, a Senior Advocate for the Supreme Court of India, there are no legal frameworks in India with which to prosecute those releasing industrial contaminants to a public water supply.

**11 Negotiation: Nanegaon, Kolwan Valley, India, March 2008**

A meeting between the elders of Nanegaon stretches on for hours as everyone voices their opinion on what decision should be made. This discussion, initiated by a local non-governmental organization (NGO) called Gomukh Environmental Trust for Sustainable Development (GOMUKH), was intended to reach a consensus about installing a biogas digester and generator to provide additional power for the village's water pump. The men deliberated for hours on who will pay for it. When the representative of GOMUKH proposed the women of the village, those who would benefit the most, should be a part of the conversation, the meeting stalled completely.

## 12 Broken connection: Savurgaon, Kolwan Valley, India, March 2008



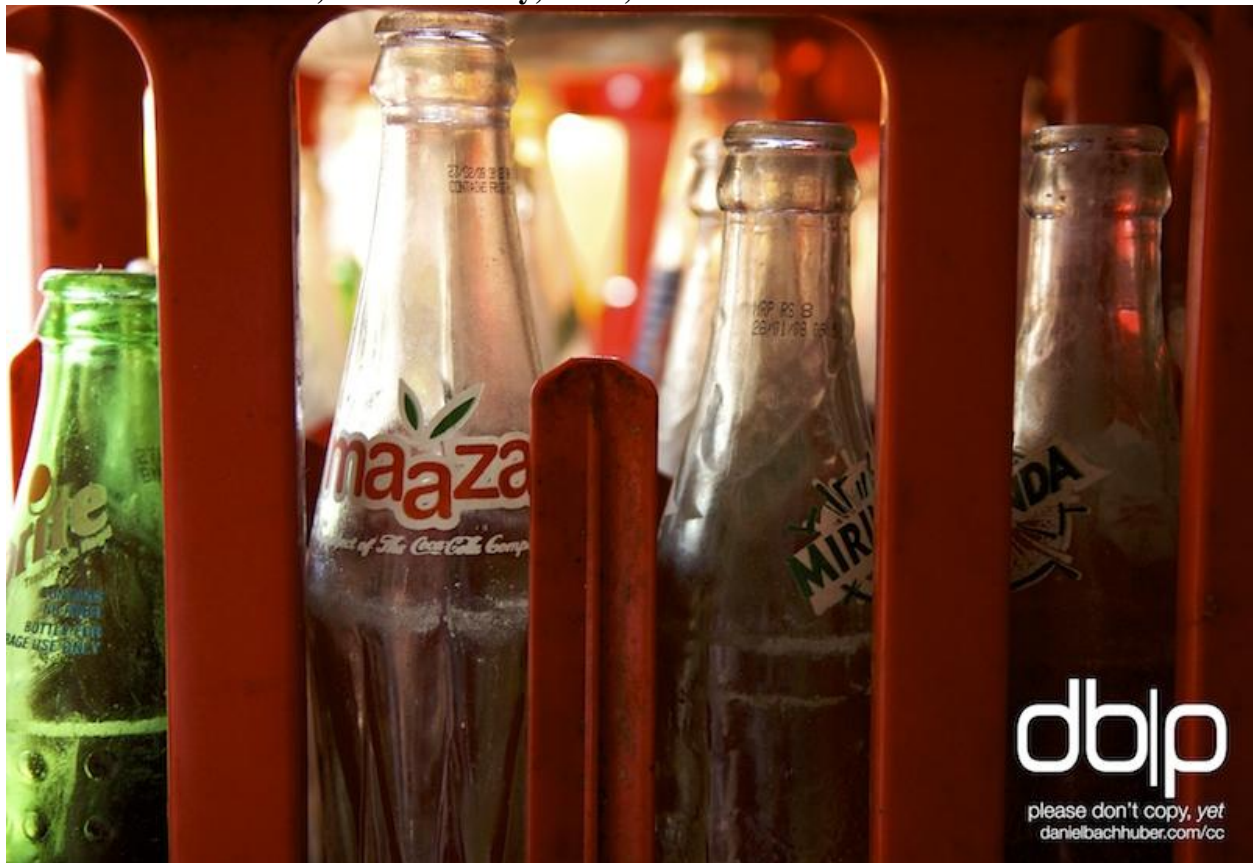
In Savurgaon, another village in the Kolwan Valley, a broken pipeline means there has been no water supply for the past five days. The community shares its local government with two other villages, a unique situation to the area which means issues are not often addressed as quickly as they should be. In the interim, many of the families are dependent on the generosity of a wealthier farmer with his own private borewell. When water does come again, though, the ways in which the pots are ordered will signify who receives their water first.

**13 From the slums: Mumbai, India, March 2008**

In Mumbai, the poorest of the poor pay disproportionately more for their water. In this case, the tariff is about nine times more. Men from the non-institutionalized slums around the suburbs wake at 4:00am every morning to buy water from those who have formal tap connections, paying between two rupees and six rupees per jerry can (for eight to ten cans each morning) from those who pay just one hundred and twenty-five rupees per month. Things might change if those selling the water did not make upwards of 2,000 rupees per day. To make matters worse, the Bombay Municipal Corporation (BMC), is considering privatizing water in the future, arguing they "lose too much money in the business" (Joshi).



**14 Globalization: Paud, Kolwan Valley, India, March 2008**



India's economic growth has been driven by foreign investment, but the Coca-Cola Company and other multinationals have received much criticism in the recent years for their alleged involvement in draining India's groundwater supply. It requires thirty to forty liters of clean water to make one liter of Coke.

**15 Summer harvest: Thar Desert, India, April 2008**

In the Thar Desert, day laborers pull a summer crop of mustard seed which will bring high prices for the landowner at the market. Many farmers cannot afford the costs associated with drilling a borewell. However, without the assistance of one, many Rajasthanis depend on limited rainfall that usually only support one season of growing. According to Anurag Gupta, who works for a Rajasthanis NGO called Gravis, "Groundwater is increasing the divide between the rich and the poor."

**16 Walking home again: Thar Desert, Rajasthan, India, April 2008**



Women and girls of all ages share the responsibility of bringing home the family's water. When water is plentiful, the walk might only be a kilometer or less. A dry year, however, can easily double or triple the distance required to find a useful source of water.

**17 Water for the family: Thar Desert, Rajasthan, India, April 2008**



A Rajasthani man fills his cart to take back home after first watering his donkey. Only 10% of Rajasthan has access to government schemes, as most water has to be transported down from Punjab via the Indira Gandhi canal.

**24 Thirst: Thar Desert, Rajasthan, India, April 2008**



Parched, India consumes its most precious resource: water.

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