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## India and pollution

### Up to their necks in it

Jul 17th 2008 | VARANASI

From The Economist print edition

**Despite good laws and even better intentions, India causes as much pollution as any rapidly industrialising poor country**

Getty Images



#### Correction to this article

A HEREDITARY Hindu priest, Veer Bhadra Mishra is wont, shortly after sunrise, to totter down the stone steps of his temple to the Ganges river, and there perform a three-part ritual. He touches the sacred water. He dips himself in it. He cups it in his hands and drinks it.

Mr Mishra, 70, cannot make it down to the river every day. The steps are steep. And the river-level at Varanasi, Hinduism's holiest city, where Mr Mishra is the eighth-generation custodian of a temple dedicated to the monkey-god Hanuman, has fallen. Diversion of the river-water, for industry, agriculture and dozens of upstream cities, is the cause of this. So, to save Mr Mishra's creaking knees, his acolytes sometimes bring him a morning cup of Ganges water—a cloudy brown soup of excrement and industrial effluent—to relish.

Mr Mishra has contracted typhoid, polio, jaundice and other water-borne ailments. A hydrologist turned environmental activist, he reasonably assumes that his morning devotions are to blame. By official standards, water containing more than 500 faecal coliform bacteria per 100 millilitres is considered unsafe for bathing. As it passes Mr Mishra's temple, at the upstream end of Varanasi's 6.5km (4 mile) stretch of terraced riverbank, or *ghats*, the Ganges contains 60,000 bacteria per 100ml.

Downstream of the *ghats*, where 60,000 devotees perform daily ablutions in the river and 32 streams of raw sewage empty into it, the figure rises to 1.5m. Two cremation grounds along the *ghats*, which dispose, wholly or partly, of 30,000 corpses a year, do not help. (Over 3,000 corpses were reported bobbing in the river last year.) In places, the Ganges becomes septic: tar-black, stinking, without life. Mr Mishra fears that Hinduism, which reveres the Ganges as “the source of life”, will suffer for this. But the corporeal effects of foul water in India may be easier to measure.

By official estimates, India has facilities to treat 18% of the 33,200m litres of sewage its cities produce every day. In fact, it treats only 13%, because of shortages of power, water and technical expertise in its sewage plants. These figures may underestimate the problem: measuring the output of 700m Indians who have no access to a toilet is tricky. But it is enough to suggest why most Indian rivers, from which millions of Indians draw their water, are horribly polluted. Unsurprisingly, then, despite much progress in related areas, such as availability of safe drinking-water, an estimated 1,000 Indian children die of diarrhoeal sickness every day. In the words of Sunita Narain, a prominent environmentalist, mocking the tourist ministry’s slogan: “Incredible India, drowning in its excreta”.

As India rapidly industrialises, this invites a troubling thought. By 2020, according to the World Bank, India’s water, air, soil and forest resources will be under more human pressure than those of any other country. Undaunted, India plans to sustain its current high rate of economic growth without the environmental devastation that Western countries, and recently China, have wrought. Its democratic traditions, it is often said, including a free press, independent judiciary and vigorous social activism, will help prevent the damage. So should its voters: according to a survey last year by the Pew Research Centre, 79% of Indians considered pollution a “very big problem”. And yet, if India cannot begin to deal with its own excrement, how will it cope with more complicated, and politically contested, hazards?

After all, its rivers are noxious despite many excellent environmental laws and regulations. Nor is a lack of money the main problem. Since 1985, and the launch of an emergency plan to save the Ganges, India has dedicated 51 billion rupees (\$1.2 billion) to cleaning its rivers, mostly by urging state governments to build sewage-treatment plants beside them. The Ganges and one of its main tributaries, the Yamuna, which runs through Delhi, were allotted over half of this cash. But less than half has been spent. And the sanitation it has built would be hopelessly insufficient even if properly used, which it is not.

In Varanasi, the state government of Uttar Pradesh (UP) has built three treatment plants with a total capacity of around 100m litres of sewage a day. But Varanasi produced 150m litres when they were built, and may now produce twice this amount. Moreover, the plants rarely operate at full capacity. During frequent power cuts, the sewage flows untreated into the Ganges. During rainy seasons—around five months of each year—the river floods the plants’ sump wells, with the same effect.

At least there is hope, in the shape of the activist priest, Mr Mishra. For over a decade, he has been engaged in a legal dispute with UP’s government over how to fix the problem. The government wants to build more of Varanasi’s current expensive and unsuccessful treatment plants. Mr Mishra, with support from the municipal government, wants a cheaper sort, designed by researchers at the University of California, Berkeley, which relies on gravity and naturally occurring bacteria and uses almost no power. On June 30th the ministry of environment, in Delhi, requested UP’s rulers to abandon their plan in favour of testing Mr Mishra’s.

Occasional victories by dogged activists, backed by the courts, are justly celebrated in India. A successful campaign in 2001 by Ms Narain’s organisation to convert Delhi’s buses and taxis from diesel to gas, and thereby reduce air pollution in the capital, was a cheering example. But these are exceptional cases amid a pervasive institutional weakness. Clueless local governments; corrupt state governments; feuding, overburdened central government: all three have played a part in the Ganges foul-up. To achieve relatively clean economic growth India will have to overcome these frailties, even as its capacity to pollute soars. Against such forces,

the efforts of environmentalists to affect policies with powerful backers seem puny, and their triumphs short-lived. Alas, with 1,000 extra vehicles on its roads every day, Delhi's air is now filthier than ever.

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**Correction:** we mistakenly wrote that the Ganges contains 60,000 bacteria per millilitre. In fact, it contains 60,000 bacteria per 100 millilitres. This was corrected on July 23rd 2008.

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