

POLLUTE AND PROSPER
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In 2010, India is one of the most popular long-haul tourist destinations in the world and earnings from tourism make a sizeable contribution to the national economy. Cities like Delhi, Mumbai and Bangalore have all the facilities of any major city; national road and train services have improved beyond belief; small, provincial towns now have internet cafes; and goods that once were only available abroad, are now a common sight in local shops. It would be hard to find any product that isn't made in an Indian factory. In the last forty years, businesses have proliferated and the middle class has become rich and powerful.

But does anyone else benefit from this progress and prosperity? Certainly, many of those living in the towns and cities enjoy these newfound riches. What about the 70% of the population who still live in the villages?

Let's go back to 1970 and visit the village of Amarpurkashi. It is bathed in early morning sun. The air is clean. Birds sing, a few dogs bark and a buffalo moans to be milked. Earlier, well before sunrise, the air rang with the rhythmic grinding of stones as young wives turned grain into flour.

At that time, there was no road connecting Amarpurkashi to the main highway and the small neighbouring villages were similarly isolated. Electricity had not yet reached this rural area. There were only three hand pumps in the whole village. The water, however, was sweet and pure, easily accessible by borings of just thirty feet. By the side of the main road that ran between the nearest towns there were natural pools of water where every day, buffaloes would be led to wallow.

Life was hard and people were poor. All but three village homes were made of mud and straw. Their landholdings were so small it was impossible to earn enough to support a reasonable standard of living. Many owned no land at all and relied on seasonal agricultural work. Literacy rates were low and there were no employment opportunities locally. Few families enjoyed the luxury of cash but relied

on the barter system. There was just a small, one-roomed government primary school.

Then, in 1994, wealthy businessmen bought some cheap land near the river and set up two paper factories, Shakumbhari Straw Products Ltd on one side of the river and Ramchandra Straw Products on the other. For the first time, simple employment was available locally and poor villagers flocked to the factories looking for jobs. The work was menial and not particularly well paid but it brought the villagers into the cash economy and together with whatever they could earn from their plots of land or seasonal labour, it improved their standard of living.

In 2010, the village has more than doubled in size. Almost every home is made of brick and most have their own hand pumps. Literacy rates have risen significantly. As well as a newly built government primary school, there are four private ones, two secondary schools and a flourishing post-graduate college. There is a good road running through the centre of the village, connecting it with other villages and with the national highway. Most families have access to electricity, television aerials are a common sight and motor cycles are a popular wedding gift. People are cleaner, better dressed and better fed.

But there is a downside to this apparently rosy picture of progress. The most common sound morning and evening is the relentless roar of the factory machinery and the shrill whistle announcing the end of a shift. All the roadside pools have long since dried up and buffaloes have nowhere to wallow. Borings of thirty feet draw only dirty, polluted water. You have to bore at least one hundred feet to reach safe drinking water.

At certain times of year, every leaf and branch is covered in a fine veneer of grey ash. Washing hung out to dry is instantly spotted with ugly granules. They fall on the hair, face and clothes of any villagers sitting outside and drop painfully into their eyes. By the side of the main highway, huge unsightly mounds of ash spoil the green countryside while the air is heavy with the bitter stench of chemical

effluents. The Aril River is just thick, stagnant sludge while crops in the fields adjacent to the factory are thin and grey, slowly dying from the polluting liquids that regularly pour from the factory outlet pipe. New illnesses are now common, among them a virulent form of asthma and life-threatening jaundice.

The Struggle begins

In December 1995, Suresh Atri, a retired environmental engineer, sent detailed complaints to the Central Pollution Control Board and made a number of requests:

- Improve the drainage capacity of the Aril River
- Do not release any more effluents into the river
- Get the factory to manage its solid waste disposal
- Arrange compensation for damaged crops
- Close the factory until the above have been implemented

There was no reply although a reminder was sent four months later and the regional newspaper published the letter in full.

Since then, there have been numerous articles and reports in the local papers and several seminars. Farmers have handed in many memoranda at the *Tehsil Diwas* (Public Open Day). More than thirty letters of complaint have been sent to the District Magistrate and

T.S.S. Total Suspended Solids.

Standard prescribed by the U.P. Pollution Control Board - In stream - 100/50/30 mg/lit

P.S.I., Dehra Dun April 2002	1500	2900	1780	100/50/30 mg/lit
RTC Lab., Moradabad, Govt. of India April 2010	4750	6150	3420	100/50/30 mg/lit
Regional office of U.P. PCB (Moradabad) Feb. 2010	96.0	94.0	Not done	100/50/30 mg/lit

T.S.S. or total suspended solids are organic and inorganic materials suspended in the water, including silt, plankton and industrial wastes. High concentrations of suspended

the Sub-Divisional Magistrate as well as to the Divisional Commissioner and the U.P. Pollution Control Board. In February 2008, a peaceful *dharna* (sit-in) began. At the end of each day, emails were sent to nearly fifty government officials, informing them of the action and the extent of the pollution and suggesting ways forward that would benefit both the factory and the local villagers.

When this too had no effect, overseas visitors who had witnessed the ever increasing environmental pollution at first hand, sent scores of emails to key officers and politicians, requesting urgent action. At the beginning of 2010, some 500 postcards were sent by local people, begging the government to investigate the matter.

Once again, nothing was done.

Tests

The water of the river had been tested by an independent laboratory in April 2002. The results showed significant pollution. In February 2010, the U.P. Pollution Control Board arranged their own tests which, strangely, showed that nothing was wrong at all. Finally, in April 2010, a government laboratory in Moradabad sent officers to collect samples and test them. They found extremely high levels of pollution, way above the prescribed limits set both nationally and internationally. Two of these results are given below:-

solids can lower water quality by absorbing light. The water then becomes warmer and is not able to hold the oxygen necessary for aquatic life. Because aquatic plants also

receive less light, photosynthesis decreases and less oxygen is produced. The combination of warmer water, less light and less oxygen makes it impossible for some forms of life to exist.

Suspended solids affect life in other ways. They can clog fish gills, reduce growth rates, decrease resistance to disease, and prevent egg and larval development. Particles that settle out can smother fish eggs and those of aquatic insects, as well as suffocate newly-hatched larvae.

Suspended solids can result from erosion from urban runoff and agricultural land, industrial wastes, bank erosion, algae growth or wastewater discharges. The above table

shows that the TSS was already, in 2002, way above the prescribed limit. By 2010, according to the government laboratory, it had increased even further. Only the test carried out by the Pollution Control Board shows normal results. It is interesting to note that when the officers come from the PCB, they always inform the factory beforehand and only take samples from the outlet of the treatment plant and always in front of the manager. They never raise any queries about the noxious stink of the encrusted sludge that is all that remains of the river or the enormous piles of ash by the roadside and encroaching on farmers' fields. They don't speak to any local villagers who could tell them that the treatment plant is only run when officials come to check the factory. The rest of the time it lies still.

BOD – Biochemical Oxygen Demand
Standard prescribed by U.P. Pollution Control Board In stream – 30 mg/lt

P.S.I., Dehra Dun April 2002	1070	1370	1400	20mg/lt
RTC Lab. Moradabad, Govt. of India April 2010	2450	3870	2370	20mg/lt
Regional office of U.P. PCB (Moradabad) Feb. 2010	24.0	28.0	26.0	30mg/lt

Micro-organisms such as bacteria are responsible for decomposing organic waste. When organic matter such as dead plants, leaves, grass clippings, manure, sewage, or even food waste is present in a water supply, the bacteria will begin breaking down this waste. Much of the available dissolved oxygen is then consumed by aerobic bacteria, robbing other aquatic organisms of the oxygen they need to live.

Biological Oxygen Demand (BOD) is a measure of the oxygen used by micro-organisms to decompose this waste. If there is a large quantity of organic waste in the water supply, there will also be a lot of bacteria present working to decompose this waste. In this case, the demand for oxygen will be high so the BOD level will be high.

When BOD levels are high, dissolved oxygen levels decrease because the oxygen that is

available in the water is being consumed by the bacteria. Since less dissolved oxygen, it is difficult for fish and other aquatic organisms to survive.

Research Results

From October to December 2009, two young graduates of Britain's prestigious London School of Economics stayed in Amarpurkashi carrying out research into the pollution. The following are extracts from their comprehensive report.

"The black ash emitted from SSPL's smokestacks has settled on vegetation, agricultural land and people. It has had an effect on eyesight, and caused serious respiratory problems. The ash is not contained by the plant, and it seems the ash has not been treated either. The smell that arises from the site is unbearable and radiates over a

large area. Even from travelling through the area on the national highway it is an unsurpassable, foul odour that clearly emanates from Shakumbhri's paper mill.

The state of the Aril River is such that it can barely be described as a river. Instead of a naturally flowing stream of water, as in the past, the channel consists of a viscous sludge of waste. Visible pollution in the surface water is coupled with the problem of seriously polluted groundwater. This source of water is used to supplement rapidly depleting surface water sources. As pollution in groundwater is often invisible, many have suffered the dangerous consequences that are common with using polluted groundwater. Having transuded into the water system and with the polluting of air, the scale of the local health problem is shocking.

The state of the soil adjacent to the river is solid, dry, and cracked from the layers of black ash that have been deposited. Normally, this land would be ideal for growing sugarcane or rice. However, the harshness of this soil means that farmers have had to resort to growing hardier crops such as mustard-seed but which attract lower prices. In particularly bad cases farmers have been unable to grow

any crops whatsoever, and have been forced to sacrifice income altogether."

The brutal facts

The struggle to get something done has been going on for fifteen years now, so far to no avail. The factory owner and his manager don't live locally. They live in comfortable mansions far away in the district town of Moradabad. The pollution doesn't affect them or their families. They have no concern for the rural folk who have to live daily with the steady degradation of their environment. They have no conscience or feelings of guilt about the damage they have caused. They act with complete impunity, safe in the knowledge that as members of India's rich middle class, no one can touch them. They are motivated solely by greed.

No one gives a damn about the rural poor. India is now becoming a significant nation internationally as its overall economy makes rapid strides. The government mouths meaningless platitudes about reducing poverty levels and bringing education to all but at the end of the day, politicians, businessmen and government officers are the ones who rule and they care only about themselves.