

# China's Pollution *Timebomb*

*The giant elephant in the corner of  
the global environmental parlor.*

BY FRIEDRICH WU

**H**istorically, most emerging economies undergoing rapid industrialization have experienced the noxious by-product of environmental pollution. But the gargantuan size of the Chinese economy, in combination with nearly three decades of industrial development carried out at a sustained and breakneck pace, weak enforcement of environmental protection, and heightened economic decentralization, have rendered environmental challenges a lot more daunting to the government. The country's over-reliance on coal as a main source of energy presents an additional hazard to the environment.

With China's energy consumption accelerating expeditiously in recent years in the midst of an inexorable surge in world oil prices, coal has become the predominant source of power supply to the country's industry. Between 2000 and 2005, coal consumption leaped by 800 million tons, which now accounts for 70 percent of China's energy needs. Combined with the still prevalent use of coal burners to heat domestic dwellings, China has the world's highest emissions of sulphur dioxide. Such emissions escalated to 25.5 million tons in 2005, or a 27 percent jump from 2000, which contributed significantly to air pollution as well as acid rain. According to the report *Environmental Protection in China, 1996–2005* released by the State Environmental

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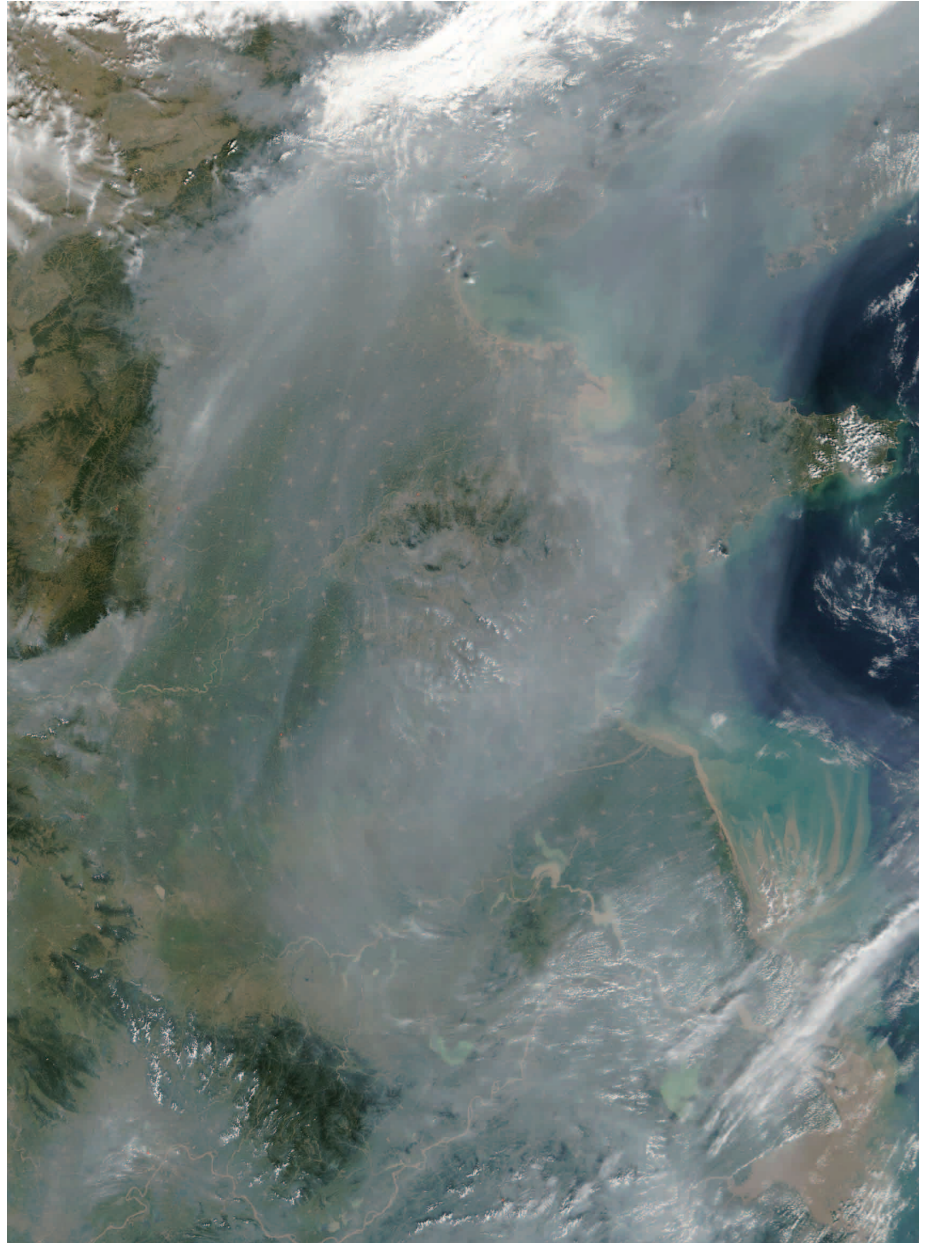
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Protection Administration (SEPA) in June 2006, “[b]y 2005, one-third of China’s territory suffered from acid rain....[and] one-third of the urban population breathed heavily polluted air.” The dire situation has been corroborated by the World Bank, which estimates that China has the dubious honor of being home to sixteen of the world’s twenty most polluted cities, and that roughly 300,000 Chinese residents each year die prematurely from respiratory diseases. Going forward, even if the SEPA could reduce sulphur dioxide emissions, air quality in China is unlikely to improve as the country’s car population is predicted to multiply swiftly from still a very low base.

Air pollution aside, water contamination in China has also reached an equally critical state. The SEPA has found that an average of over 70 percent of the water in five of China’s seven major rivers is of undrinkable quality. Over the years, the wanton disposal of industrial waste, household sewage, agricultural chemicals, and shipping discharges into these rivers have caused severe pollution to China’s precious water resources. With 64 percent of its water being considered unsuitable for human consumption, the Yellow River (China’s second longest) nevertheless continues to supply unclean water to 12 percent of the country’s population and 15 percent of its farmland. While the Yangtze River, China’s longest, is less defiled with only 28 percent of its water being graded undrinkable, its conditions are rapidly deteriorating. The river, which runs through the country’s most populated regions and supplies water to 186 cities, is estimated to sweep along with it 40 percent of all waste water produced in China. It is also reckoned that of roughly 25 billion tons of waste water a year, less than 20 percent is treated before it flows into the Yangtze.

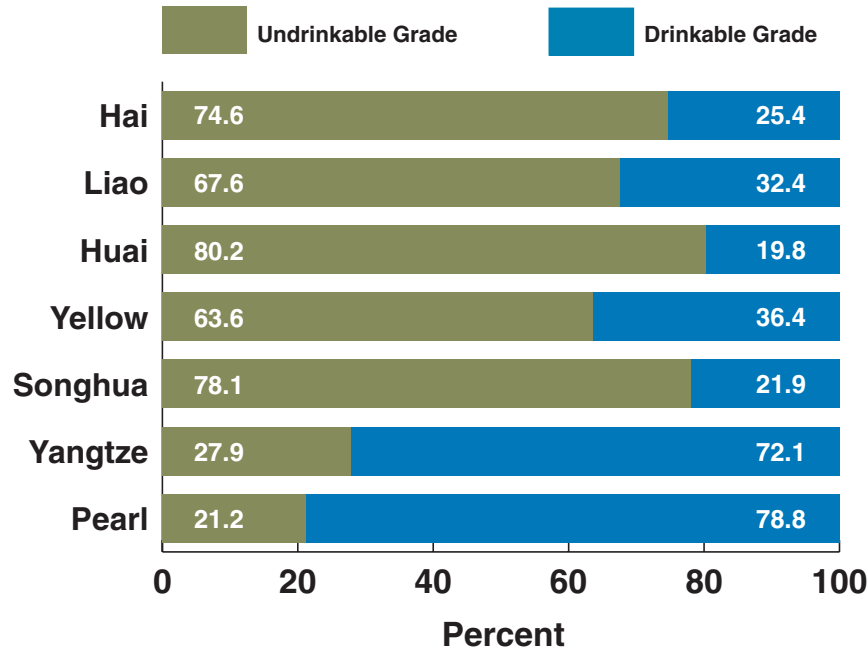
As a reflection of the urgency of China’s emerging water crisis, SEPA Vice Minister Pan Yue has admitted that “one quarter of the Chinese people drink substandard water.” Common sense tells us that an effective way to protect China’s scarce water resources from contamination is to impose a drastic overhaul of the country’s waste treatment system. This course of action



NASA IMAGE COURTESY JEFF SCHWALTZ. MODIS LAND RAPID RESPONSE TEAM AT NASA GSFC

*A huge, thick cloud of haze covers China from the Bo Hai Bay coastline in the east to the mountains in the west in early September 2005.*

## Water Quality of Seven Major Chinese Rivers, 2004



Source: State Environmental Protection Administration, China

would, however, entail substantial additional investment as well as a long time lag before the emergence of some visible results, as currently the rate of environment-friendly disposal of urban waste in China is below 20 percent, while the disposal rate of dangerous industrial waste is 32 percent.

The exact economic toll of environmental degradation is difficult to quantify. However, after decades of official silence, the new administration under President Hu Jintao and Premier Wen Jiabao seems to have espoused a more transparent stance. Aggregating all the

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wretched inflictions from the country's degraded environment, the SEPA has recently estimated that "environmental damage has eaten away between 8 to 13 percent of [China's] GDP growth every year," a figure that is in line with the World Bank's assessment in 2004.

Besides government estimates, the shocking magnitude of China's combined environmental woes is also reflected by the country's rock-bottom score on the Environmental Sustainability Index (ESI) constructed jointly by Columbia and Yale Universities, which in 2005 ranked China 133rd out of 146 countries. Comprising numerous indicators related to the environment, the index found China to be extremely weak in the sustainability of water use, air pollution, and emissions of acid rain and greenhouse-effect gases, as well as in resource and waste management, and environmental governance. On the basis of ESI's findings, the World Bank has suggested that "China's low overall rank could be interpreted as an alarming indication of the country's environmentally unsustainable development."

Underfunding, a weak enforcement watchdog, and growing economic decentralization are the three main causes of China's wretched record of environmental pro-

tection. Between 1996 and 2004, public spending on preserving the environment amounted to a measly 1.0 percent of GDP, with a negligible increase to 1.3 percent in 2005. In addition, the SEPA has long been a feeble institution. Even after it was elevated to the status of a ministry in 1998, it continues to be under-staffed. As of 2004, the SEPA headquarters in Beijing employed no more than 300 workers. Furthermore, in the capital, the SEPA has to contend for influence with other powerful bureaucracies such as the Ministry of Construction which controls water and sewage treatments. More recently, under the pressure of the National Bureau of Statistics, the SEPA has needed to revise significantly downward its estimate of the economic costs of environmental degradation to 3.05 percent of 2004's GDP. Last but not least, progressive economic decentralization has deflated the SEPA's regulatory potency, especially at sub-national levels.

Local resistance to the SEPA's drive to impose tough anti-pollution standards and shut down polluting factories remains strong, as sub-national officials are afraid that the implementation of stringent measures could discourage investment, cut jobs, and reduce tax revenue. Moreover, operators of heavily polluting plants often either bribe local officials to look the other way or just pay cursory fines. Environment-related graft seems to be rife. As the new SEPA Minister, Zhou Shengxian, has recently complained, "[f]raud in project approval was prominent with many projects passing their environmental assessment without fulfilling the necessary criteria."

Going forward, even though the 11th Five-Year Plan (2006–2010) has set the ambitious targets of slashing nation-wide energy consumption per unit of GDP by 20 percent and the total amount of major pollutants dis-

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charged by 10 percent nationwide, there are serious doubts as to whether the SEPA could deliver as its past track record is rather poor. For example, at the end of the 10th Five-Year Plan (2001–2005), sulphur dioxide emissions surged to 25.5 million tons, 42 percent higher than the Plan's goal set in 2001 of cutting emissions to 18 million tons a year. Furthermore, according to SEPA Vice Minister Pan Yue's own admission, “many provinces have failed to meet the major environment protection targets of the 10th Five-Year Plan (2001–05).” Already, in the first half of 2006, sulphur dioxide emissions had increased 5.8 percent compared with the same period last year. Meanwhile, environmental degradation has emerged as a main cause for the escalation in “public order disturbances,” sparking in the recent past a series of sometimes violent confrontations between local authorities and rural residents. In April 2005, for instance, dozens of protesters were injured by police in riots against a polluting chemical plant in Wangkantou, Zhejiang Province, which allegedly had destroyed farm crops. As the new SEPA Minister Zhou has ominously warned, “[t]he issue of pollution has become a ‘blasting fuse’ of social instability” and “[t]he worst is yet to come, judging by the increased frequency of serious pollution incidents.” Now that the government has recognized the high economic price of environmental degradation, it must come to grip with the unfolding sociopolitical costs as well. ◆