Beijing dips its toes in troubled waters

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BEIJING - For millennia, China's great rivers have snaked their long, meandering courses across the country, providing the life-blood for Chinese civilization: water. Along the banks of the Yellow River to the north and the Yangtze to the south, 5,000 years of history and culture have unfolded, with agriculture flourishing in an otherwise inhospitable terrain and trade bringing prosperity and dynamism in its wake.

But the effects of severe pollution, large-scale damming and
climate change are combining to spell catastrophe for the rivers, with deeply worrying implications for the millions of Chinese who continue to depend on them.

Ten percent of the Yellow River today is sewage, little surprise when, according to the government, the volume of wastewater flowing into the river increased from about 2 billion tonnes in the 1980s to 4.3 billion tonnes by 2005. Experts say that since the 1950s the volume of water in the Yellow River has decreased by 75%, so that the once-mighty river has been reduced to a more or less seasonal body of water that usually dries up 800 kilometers before reaching the sea.

The diagnosis for the Yangtze is equally bleak. This year, the first annual health report for the river revealed 30% of its major tributaries to be heavily polluted with high levels of ammonia, nitrogen and phosphorus. In 2006 alone, more than 26 billion tonnes of wastewater was pumped into the Yangtze, a river that flows through 11 provinces and municipalities. One-tenth of the main stream of the river is estimated to be in "critical condition".

The report, the combined output of the Chinese Academy of Sciences, the Ministry of Water Resources and the World Wide Fund for Nature, also found that the annual harvest of fish in the river fell from about 500,000 tonnes per year in the 1950s to 100,000 tonnes in the 1990s.

And despite growing awareness of the looming water crisis, the deputy director of China's State Environmental Protection Administration (SEPA), Pan Yue, called 2006 "the grimmest year yet for China's environmental situation", with a total of 130 chemical spills occurring during the year, or one spill every three days.

The grim statistics do not end here. According to SEPA, 70% of China's rivers and lakes are polluted to some degree and 28% are too polluted even for irrigation or industrial use. Moreover, 90% of the water under cities is also too polluted to drink. As a result, several hundred million Chinese lack access to safe water.

Pollution aggravates China's natural water scarcity, particularly in the drought-prone north. Already, the country's annual per capita water supply is only 2,200 cubic meters, just 25% of the global average, according to the World Bank. Factoring in a combination of trends including rapid urbanization, continuing industrialization and climate change, it is quite likely that water rather than oil will be at the center of China's coming resource crisis.

Water is the most ubiquitously needed resource, Professor Liu Changming, director of the United Research Center for Water Problems (URCWP), points out. "It is needed for industry, for agriculture

and by every living being. We face an energy crisis but we can work on alternative and renewable energy resources. When it comes to the water crisis, there is no alternative for water," he said.

Indeed, water in China, as elsewhere, is a multi-faceted issue with a direct and far-reaching impact on health, economic development, food security, political stability, bio-diversity and even international relations.

One of the major sources of water pollution is untreated industrial waste that is intentionally or accidentally discharged into rivers. Some 21,000 chemical companies line the Yangtze and Yellow rivers. Along with paper, steel, textile and power plants, these chemical-manufacturing units are often in blatant violation of environmental norms for discharges and wastewater treatment.

The Institute of Public and Environmental Affairs (IPEA), a non-governmental organization (NGO) run by Ma Jun, author of the influential book China's Water Crisis, maintains a website that keeps track of all the companies known to have violated pollution laws. Currently 5,500 companies are listed, including 80 multinationals.

The crux of the problem underlying the lax enforcement of pollution norms is that for the current generation of local officials, economic growth defined solely in terms of gross domestic product (GDP) is the paramount goal. Promotions are usually directly linked to the amount of investment attracted. As a result, implementing environmental laws is often seen as detrimental to the local economy as well as the career prospects of individual officials.

Collusion between polluters and local officials is also commonplace. Thus even companies equipped with wastewater-treatment systems rarely use them, given the expense of the power it takes to run the machines. Officials in charge of enforcement are paid off to turn a blind eye. That a large number of offending companies are state-owned complicates the issue even further.

One of China's worst ever pollution spills into its waterways occurred in November 2005 when a blast at a petrochemical plant in Jilin province led to 100 tonnes of the carcinogenic chemicals benzene and nitrobenzene being discharged into the Songhua River.

The plant was owned and managed by PetroChina, the country's largest state-owned energy company. After the blast, the 4 million inhabitants of Harbin city in northeastern China's Heilongjiang province had their water supply cut off for five days.

The spill was kept secret for more than a week. During this time, as the 80-kilometer slick made its way toward Harbin, tens of thousands continued to use the river for drinking and washing. The people of Harbin were initially told that their water supply was cut off for maintenance works, and the real reason was only made public almost 10 days after the blast occurred. It was six days before Jilin officials even informed their counterparts in Heilongjiang about the spillage, ostensibly to "avoid spreading panic".

"The biggest challenge those fighting pollution face is really this
lack of transparency and accountability in China,"said Ma. The efforts of IPEA to"name and shame" polluters by listing them on the Internet is part of the wider fight to create greater transparency and public participation, he said.

Redressing pollution purely from the top down through administrative measures, Ma argues, will be doomed in the absence of a more active civil society. The danger for China, he says, is that if the emergence of organized civil society in the form of more open media and independent NGOs is thwarted, people will be left with little choice but to voice their protests by violent means and riots.

Several of the 87,000 “mass incidents” that took place across the country in 2005 were village-level protests against polluted water and the corruption that was perceived to be at its root. Thus in April of that year 10,000 rioters in Huaxi village in Zhejiang province attacked police after accusing officials of allowing a chemical factory to pollute the river and groundwater, allegedly resulting in stillborn babies and birth defects. A few months later in Xichang village close to Shanghai, a 15,000-villager-strong demonstration against toxic-waste discharges from a pharmaceutical plant believed to have polluted irrigation water and stunted local crops turned into a pitched battle with the police.

Pollution is widely believed to be linked to the increase in different kinds of cancers in China in recent decades. Liver-cancer deaths, which are particularly associated with water pollution, have doubled since the 1990s. A recent survey released by the Ministry of Health showed cancer to be China’s top killer, accounting for 23% of deaths in rural areas and 19% in cities.

Reports on “cancer villages” in the media have also become a frequent occurrence. One such village is Liukuai Zhuang near Tianjin city, an hour or so east of Beijing. According to a People’s Daily report, water pollution in Liukuai Zhuang drove up the cancer rates in the village to 25 times the national average in 2004.

The village is in an area where dozens of chemical factories have set up shop since the 1980s, bringing jobs and prosperity in their wake. Tianjin municipality is one of the wealthiest in the region. However, uncontrolled discharges from the same factories also led to severe pollution of water sources, ultimately causing long-term damage to residents’ health.

Water pollution and the corruption that allows it have thus emerged as some of the most politically sensitive issues in contemporary China with the power to threaten the ruling party’s legitimacy by threatening the social stability so crucial to the Chinese Communist Party’s continuing rule.

But addressing water pollution is not merely a matter of targeting industrial polluters. According to Andres Liebenthal, head of the World Bank’s environment and social division in Beijing, industrial pollution only accounts for one-third of total water pollution in China. Another third is the result of municipal waste, with the final third consisting of the runoff from fields contaminated by pesticide and fertilizer.

The country pays a heavy economic price for water pollution. Liebenthal puts its cumulative health and economic cost at some 2.3% of China’s GDP per annum, a figure roughly equal to the entire yearly education budget of the government.

The loss to the economy from depletion of groundwater, for example, is estimated at 50 billion yuan (US$6.5 billion), the costs to industry of using polluted water another 50 billion yuan. The economic cost of the health impact of pollution, including diarrhea and cancers, is placed at 0.5% of GDP.

The economic impact of the water scarcity that pollution contributes to will only increase as China’s economy continues to industrialize and urbanization steps up, with tens of millions of peasants from the countryside expected to move to cities in the coming years.

Already, Ma points out, 400 out of 650 large cities in China suffer from water scarcity, more than 100 to a critical level. Liebenthal adds that of a total of 55 million hectares of arable land in China, 7 million cannot be irrigated at all because of the water shortages. Another 20 million hectares suffer from water deficiency.

China’s water shortage caused in part by pollution is aggravated by climate change. According to Li Yan, a campaigner with the NGO Greenpeace’s China office, glaciers in the Qinghai-Tibetan plateau, the source region for many of the country’s waterways, including the Yangtze and Yellow rivers, are

retreating at frightening speeds. She says the latest report by the United Nations' Intergovernmental Panel on Climate Change warns that if global warming continues at current levels, 80% of all Himalayan glaciers could disappear by 2035.

Liu of URCWP says that while climate change leads to greater precipitation in some areas, it conversely leads to water shortages in others. As an example he points to the fact that rainfall in Beijing has continuously been 20-30% lower than average since 1998.

The northern part of China, always water-deficient, has begun to suffer from severe drought, he says. In the 1980s, the north accounted for 19% of China's total water resources. This proportion has now dropped to 16%, a change Liu attributes to climate change.

The third factor contributing to China's water crisis is inefficient use of water. Aside from pollution and global warming, the fact that water is heavily subsidized in China means that neither farmers nor ordinary consumers have any incentive to save water or recycle it. For industry, China's water-consumption efficiency is one-tenth that of developed countries.

Both Liu and Liebenthal thus agree that the government could help the situation by introducing market mechanisms that would create incentives for consumers to use water more efficiently.

But raising the price of water, particularly for farmers - given food-security concerns - is politically difficult for the government. Moreover, Ma says that even were the government able to increase the cost of water without suffering a negative political fallout, the measure would leave untackled the real culprit behind the crisis: pollution.

He has similar criticisms against what is currently Beijing's most ambitious solution to the water problems: the South-North Water Diversion Project.

The project, the largest ever of its kind, is expected to cost $62 billion by the time of completion in 2050. Involving the construction of three 1,280km channels connecting the water-rich south to the arid north, the project is eventually expected to divert 44.8 billion cubic meters of water annually to the population centers of the north. Large parts of the construction of the eastern and middle routes are scheduled for completion by 2010.

"The South-North Water Diversion can only function as an emergency-relief project," said Ma. "Even when it's complete it will only make up a part of the water shortfall in the north and, given its expense, I doubt whether it is an economical solution to the problem."

Liu agrees that the grandiose project will not fix any of the fundamental issues underlying China's water woes and may even create further environmental problems of its own, in addition to necessitating the relocation of 250,000 people.

The planned diversion of water from southern rivers also has some foreign governments worried, given that several rivers that originate in China eventually cross borders and flow into neighboring nations. Dams along the Mekong River have thus caused concerns in Cambodia, Laos and Vietnam. India and Bangladesh are also known to be keeping a close eye on reports that China may be planning to divert the waters of the Brahmaputra River.

China has a long history of linking development and "progress" with large-scale engineering projects, such as the Three Gorges Dam. The country thus boasts about 46% of the total dams in the world, including 20,000 dams that are classified as "big".

"But although there are still some within the Chinese government who believe you can fix everything

through engineering, overall there is a realization that this is simply untrue," said Liu.

Ma agrees. "For the current administration, the priorities are sustainable development and a more harmonious approach between man and nature rather than the traditional dominant notion that nature is simply there for man to harness," he said.

The reasons for this change, according to Ma, are in the central government having realized the linkages among the water crisis, public health and social stability. "They cannot afford economically or politically to ignore the issue anymore."

In March 2006, China's 11th Five-Year Plan thus set a target of reducing pollution discharges by 10% in 10 years' time. Although the pollution-control goals for 2006 were not met, Premier Wen Jiabao announced this year that he would lead a new task force to ensure better compliance with targets. Greater recycling of water and more aggressive treatment of wastewater is also being promoted. A wastewater levy was introduced in 2002, followed by a 2003 regulation that raised fines for polluters.

Beijing is also threatening to cut central government funding to localities that fail to meet pollution-control targets. Some provinces have even announced financial incentives of up to 1 million yuan for city officials who prove effective in combating pollution.

The central government's efforts have so far met with mixed results. Asserting Beijing's will on largely fiscally independent and powerful local governments is more of a formidable challenge than often imagined.

But Ma points out that despite the imperfect way in which the writ of Beijing is implemented countrywide, the very fact that Beijing itself is taking serious cognizance of the water crisis holds out hope.

"I am optimistic," he said, "because China is still a very top-down country, and you need support from the top to achieve anything. That's the first step, and we now have that."

However, despite his optimism, Ma cautions that the next step will be both more difficult and crucial: increasing transparency and public participation.

While some critics hold that making this change is impossible without first doing away with China's one-party political system, Ma believes that a stronger civil society can emerge even within the current political context.

"What we really need is to develop the rule of law, to ensure that the government's own rules regarding social and environmental impact assessments are followed before granting permission to factories or infrastructure projects," he said. He pointed to NGOs like his own as well as to a growing domestic media engagement with environmental issues as proof that a nascent civil society has already taken root in China.

While there is room for debating Ma's position, what is clear is that unless fundamental policy changes are both made and implemented, China's aspirations to superpower status may be thwarted by something as "commonplace" as water. For the country's leadership, the management of its water resources is thus a litmus test, and the manner in which Beijing tackles this test will determine whether the country's future will be great, or simply thirsty.

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* From Asia Times Online: http://www.atimes.com/atimes/China/IH08Ad01.html

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