

China's Environmental Challenge: Political, Social and Economic Implications

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Executive Summary

China's spectacular economic growth—averaging 8% or more annually over the past two decades—has produced an impressive increase in the standard of living for hundreds of millions of Chinese citizens. At the same time, this economic development has had severe ramifications for the natural environment. There has been a dramatic increase in the demand for natural resources of all kinds, including water, land and energy. Forest resources have been depleted, triggering a range of devastating secondary impacts such as desertification, flooding and species loss. Moreover, poorly regulated industrial and household emissions and waste have caused levels of water and air pollution to skyrocket. China's development and environment practices have also made the country one of the world's leading contributors to regional and global environmental problems, including acid rain, ozone depletion, global climate change, and biodiversity loss.

Environmental degradation and pollution in China also pose challenges well beyond those to the natural environment. The ramifications for the social and economic welfare of the Chinese people are substantial. Public health problems, mass migration, forced resettlement, and social unrest are all the consequence of a failure to integrate environmental considerations into development efforts effectively.

This does not mean that the Chinese leadership is ignoring the challenge of environmental protection. Both as result of domestic pressures and international ones¹, China's leaders have become increasingly cognizant of the need to improve the country's environment. The State Environmental Protection Administration and other relevant agencies have tried to do as much as they can, establishing an extensive legal framework and bureaucratic infrastructure to address environmental concerns. However, China's environmental bureaucracy is generally weak, and funding and personnel levels remain well below the level necessary merely to keep the situation from deteriorating further. Without greater support from Beijing, the regulatory and enforcement regimes also remain insufficient to support implementation of the best policies or technological fixes.

Much of the burden for environmental protection, therefore, has come to rest outside of Beijing and the central government apparatus. Responsibility has been decentralized to the local level, with some wealthier regions under proactive mayors moving aggressively to tackle their own environmental needs, while other cities and towns lag far behind. The government has also encouraged public participation in environmental protection, opening the door to non-governmental organizations and the media, who have become an important force for change in some sectors of environmental protection. The international community—through bilateral assistance, non-governmental organizations, international governmental organizations, and most recently, multinationals—has also been a powerful force in shaping China's environmental practices.

Still, much remains to be done. The particular mix of environmental challenges and weak policy responses means that the Chinese people cannot yet claim several basic rights: the right to breathe clean air, to access clean water, to participate in the decision-making process on industrial development or public works projects that affect their livelihood, and to secure justice when these rights are violated.

Without greater attention and commitment from the center, China's environment is likely to continue to deteriorate throughout much of the country, causing further social and economic distress domestically and levying even greater costs on the environmental future of the rest of the world.

I. What Does China's Environment Look Like Today?

China's overwhelming reliance on coal for its energy needs² has made its air quality among the worst in the world. In 2000, China's State Environmental Protection Administration (SEPA) tested the air quality in more than 300 Chinese cities, and found that almost two-thirds failed to achieve standards set by the World Health Organization for acceptable levels of total suspended particulates, which are the primary culprit in respiratory and pulmonary disease. Acid rain, resulting from sulfur dioxide emissions from coal burning, also affects over one-fourth of China's land, including one-third of its farm land, damaging crops and fisheries throughout affected provinces.

Economic development has also impinged on China's already scarce water resources. Industrial and household demand has skyrocketed more than 70% since 1980. About 60 million people find it difficult to get enough water for their daily needs, and in several water scarce regions in northern and western China, factories have been forced to close down because of lack of water. In addition, water pollution is posing a serious and growing threat to water reserves. A major source of this pollution is industrial waste from paper mills, printing and dyeing factories, chemical plants, and other small highly polluting and largely unregulated township and village enterprises. The result is that more than three-quarters of the water flowing through China's urban areas is considered unsuitable for drinking or fishing; about 180 million people drink contaminated water on a daily basis; and there have been serious outbreaks of waterborne disease along several major river systems. The impact of economic development on water scarcity is further compounded by water prices that do not reflect demand, poor water conservation efforts, and inadequate wastewater treatment facilities.

China's forest resources also rank among the lowest in the world. Demand for furniture, chopsticks, and paper has driven an increasingly profitable but environmentally devastating illegal logging trade. By the mid-1990s, half of China's forest bureaus reported that trees were being felled at an unsustainable rate, and twenty percent had already exhausted their reserves. China's Sichuan province-home to the famed pandas-now possesses less than one-tenth of its original forests. Even the worst examples of deforestation in the United States, such as the transformation of Vermont from 70% forest to 30% forest over the past century, are mild in comparison to China's experience. Loss of biodiversity, climatic change, and soil erosion are all on the rise as a result.

Deforestation, along with the overgrazing of grasslands and over-cultivation of cropland, has also contributed to an increase in the devastating sandstorms and desertification that are transforming China's North. More than one-quarter of China's territory is now desert, and desertification is advancing at a rate of roughly 900 sq. miles annually. In May 2000, then Premier Zhu Rongji worried publicly that China's capital would be driven from Beijing as a result of the rapidly advancing desert. In addition, an average of thirty-five sandstorms wreaks havoc in Northern China every year. Year by year, this dust has traveled increasingly far afield, darkening the skies of Japan and Korea, and even a wide swath of the United States. In Beijing, the sandstorms reduce visibility, slow traffic, and exacerbate respiratory problems.

China is also exerting a significant impact on the regional and global environment. Acid rain and depletion of fisheries are among the most serious regional impacts. Globally, China is one of the world's largest contributors to ozone depletion, biodiversity loss, and climate change, and it is an increasingly important participant in the illegal trade in tropical timber from Southeast Asia and Africa.

II. What are the social and economic costs of this environmental pollution?

China bears several indirect and growing costs from its resources pressures: migration, public health, social unrest, and declining economic productivity.

Migration

Chinese and Western analyses both suggest that during the 1990s, twenty to thirty million peasants were displaced by environmental degradation, and that by 2025, at least 30-40 million more may need to relocate. These migrants are likely to place significant stress on cities already seeking to manage migrant populations of more than 20% of the population in many major Chinese cities. While thus far, burgeoning coastal economies have managed to absorb large numbers of migrant workers, as tensions have flared in urban areas over recent firings and growing unemployment, there have been attempts to discourage migration to the cities. In 2001, in Changchun, the capital of Jilin province, for example, officials attempted to drive out migrant workers by demanding extremely high fees for operating pedicabs. The drivers-overwhelmingly migrants who had been forced to leave their parched farmland-protested and blocked the entrance to a local government compound. While this incident was fairly short-lived, if not managed properly, a combination of growing numbers of migrant laborers and unemployed state-owned enterprise workers could trigger much larger-scale conflict in urban areas.

Forced migration or resettlement, as a result of large scale public works projects such as river diversions or dams, also is a source of social disquietude. In the case of the Three Gorges Dam, for example, resettlement has provoked demonstrations involving hundreds of farmers who believe they were being inadequately compensated. Probe International and Human Rights Watch have joined International Rivers Network in monitoring the resettlement process and the local political situation around the Dam and have issued several scathing reports regarding the corruption that has plagued the resettlement efforts. On December 27, 2002, the government also launched the grand-scale south to north diversion of the Yangtze River to bring water to Beijing, Tianjin and other northern cities at a cost of tens of billions of dollars. This will also necessitate the resettlement of two to three hundred thousand Chinese.

Public Health

For Chinese citizens, perhaps the most frightening consequence of environmental pollution has been the range of public health crises plaguing local communities throughout the country. In 2000, the Ministry of Agriculture reported that almost 20% of agricultural and poultry products in major industrial and mining districts and in areas irrigated with contaminated water contained excessive levels of contamination. Chinese and western health officials have linked water polluted with arsenic, mercury, and cadmium to a high incidence of birth defects, cancer, and kidney and bone disorders near many major rivers and lakes. The World Bank also has estimated that seven percent of all deaths in urban areas-about 178,000 people-could be avoided if China met its own air pollution standards.

Social Unrest

The Chinese media have reported only sporadically on the impact of water scarcity or highly polluted water, damaged crops, and polluted air on social stability; but in the late 1990s, China's Minister of Public

Security stated openly, "Incidents [that] broke out over disputes over forests, grasslands, and mineral resources" are among "four factors in social instability." Farmers and village residents whose produce or water source is poisoned by a local factory often feel they have little recourse other than violent protest. Resource scarcity similarly may provoke violence. In July 2000, for example, about 1000 villagers in Anqiu, Shandong province fought for two days when police attempted to block their access to makeshift culverts that were irrigating their crops. One policeman died, 100 people were injured, and 20 were detained.

Economic Productivity

As local officials confront the social costs of environmentally degrading behavior, they must also negotiate the massive financial costs. There is widespread agreement among environmental economists that the total cost to the Chinese economy of environmental degradation and resource scarcity is 8%-12% of GDP annually. The greatest cost is in the health and productivity losses associated with urban air pollution, which the World Bank estimates at more than \$20 billion. Water scarcity in Chinese cities costs about \$14 billion in lost industrial output (when factories are forced to shut down); in rural areas, water scarcity and pollution contribute to crop loss of roughly \$24 billion annually. Although not much systematic work has been done to estimate the future costs of these growing environmental threats, the World Bank has predicted that unless aggressive action is taken, the health costs of exposure to particulates alone will triple to \$98 billion by the year 2020, with the costs of other environmental threats similarly rising.

III. What is the Strategy of the Chinese Government?

The Chinese leadership has developed a five-part strategy to address environmental problems: policy guidance from the center, devolution of power to local governments, cooperation with the international community, the development of grassroots environmentalism, and the enhancement of the legal system.

Policy Guidance from the Center

First, there is policy guidance from the center. China's State Environmental Protection Administration (SEPA), the State Development and Planning Commission, the State Economic and Trade Commission and the Environmental Protection and Natural Resources Committee (EPNRC) of the National People's Congress, among others, all play important roles in integrating environmental protection and economic development and bring different interests and priorities to bear. The core agencies behind China's environmental protection efforts—the EPNRC, the SEPA, and the judiciary, headed by the Supreme People's Court—together claim responsibility for the full scope of central governmental activities, including drafting of laws, monitoring implementation of environmental regulations and enforcement.

Over the past decade or so, there has been a significant increase in both the skill level and capacity of the agencies' staffs. There is a growing core of bright and capable people who are committed to seeking out new and creative ways to integrate economic development with environmental protection. They experiment with pricing reform for natural resources, tradable permits for sulfur dioxide, environmental education campaigns, etc. Still, the central bureaucracy is grossly understaffed and underfunded. There is only 300 full time staff in China's SEPA; in comparison, the U.S. EPA has more than 6000. In addition, China's central budget for environmental protection is still limited to about 1.5% of GDP annually, and many analysts believe that much of this goes to non-environmental protection-related infrastructure projects and other programs. Chinese scientists themselves have estimated that China ought to spend at least 2% of GDP annually on environmental protection, merely to keep the situation from deteriorating further.

Devolution of Environmental Responsibility to Local Government

A second conscious strategy of the Chinese leadership, since about 1989, has been to devolve authority for environmental protection to the local level³. The result, not surprisingly, is that wealthy regions with proactive leaders tend to fare very well. Shanghai, for example, routinely invests over 3% of its local revenues in environmental protection and has made substantial strides toward cleaning up its air and water pollution problems. Poorer regions, in contrast, continue to see their environment deteriorate, despite the overall improvement in the country's economy. They cannot count on assistance from the center, and are without sufficient local funds to invest. In addition, the central government closely monitors all World Bank activities in order to ensure that money does not flow to poorer regions with a higher probability of default on their loans.

Poorer regions also are more likely to suffer from a lack of trained personnel within their local environmental protection bureaus to carry out inspections and enforce the law. Moreover, local officials in these areas often place enormous pressure on environmental protection bureaus to limit or even ignore the fees they attempt to collect or fines they attempt to impose on polluting enterprises for fear of impinging on economic growth or increasing unemployment⁴. (In some cases, too, local officials are part owners in these local factories.) Even when local environmental officials succeed in closing down a factory, it will often reopen in another locale or operate at night.

Cooperation with the International Community

A third element of China's plan to improve its overall environment is to tap into the expertise and resources of the international community. China is the largest recipient of environmental aid from the World Bank, the Asian Development Bank, the Global Environmental Facility and Japan. The international non-governmental organization community has also become increasingly active in China. Organizations such as Environmental Defense, the Natural Resources Defense Council, the World Wildlife Fund, and the Rockefeller Brothers Fund all have extensive projects in China to introduce new policy approaches to environmental protection on issues as wide ranging as organic farming, energy efficiency, and tradable permits for sulfur dioxide. Moreover, multinationals, such as Shell and BP, have begun to support China's environmental efforts. They introduce better environmental practices and technologies, may undertake independent and thorough environmental impact assessments, and fund activities by Chinese non-governmental organizations such as environmental education programs.

Foreign investment is not always clean investment-in fact, in many instances, the opposite is true⁵. And the environmental implications of China's further integration into the world economy through its participation in the World Trade Organization are likely to be mixed: diminishing land intensive farming in favor of increased agricultural exports, for example, but also increasing the opportunities for heavy polluting industries such as textiles and tin mining. Overall, however, the international community has played a crucial role in terms of policy advice and investment in raising the level of China's environmental practices.

Developing Grassroots Environmentalism

Perhaps most interestingly, China has opened the door to the involvement of non-governmental organizations and the media in environmental protection. By permitting the establishment of these relatively independent efforts, Beijing hopes to fill the gap between its desire to improve the environment and its capacity and will to do so. At the same time, the government is very careful to monitor the work of these NGOs in order to ensure that environmentalism does not evolve into a push for broader political reform as it did in some of the republics of the former Soviet Union or countries of Eastern Europe.

Generally, therefore, the NGOs do not lobby or criticize the central government publicly, and they tend to tackle less politically sensitive issues not directly involved in economic development. Most environmental NGOs devote their efforts to nature conservation, species protection, and environmental education. Other NGOs focus their attention on urban renewal: recycling activities and energy efficiency. These NGOs work very hard to coopt local government officials to support their work. Finally, there are environmental activists with interests and goals that exist well outside the boundaries for NGO activity established by the central government. Dai Qing, a world-renowned environmentalist, who has consistently opposed the Three Gorges Dam for example, clearly falls into this category. She spent ten months in prison for her book *Yangtze! Yangtze!*, which exposes in great detail the politics behind the Dam.

The Chinese government has also encouraged the media to develop programs and publish articles focused on the environment. Chinese newspapers, radio and television now accord a prominent position to environmental issues. Television, in particular, has become an integral part of environmental protection, often educating the public and sometimes spurring citizens to take action individually in the process. Two years ago, for example, a number of Chinese citizens in different cities began battery recycling programs after watching a television show devoted to the topic. The media also play an important investigative role. In several cases, they have been responsible for alerting authorities in Beijing to local corruption or ineptitude, demonstrating in vivid color that local governments are flouting environmental regulations or failing to carry out national environmental campaigns. At one television station in Beijing, people line up outside the door of the studio to bring attention to environmental problems in the hopes of having the station's reporters investigate the issue.

Enhancing the Legal System

China's legal system has long been criticized for its lack of transparency, ill-defined laws, weak enforcement capacity, and poorly trained lawyers and judges. Over the past decade, however, the government has made great strides on the legislative side, passing upwards of 25 environmental protection laws and more than 100 administrative regulations, in addition to hundreds of environmental standards. While the quality of some of these laws could be improved, China's environmental law-makers have demonstrated increasing sophistication in their understanding of how to negotiate and draft a technically sound and politically viable law. They also have taken to publishing some draft laws and regulations on their websites to invite public comment, an important improvement in the transparency of China's legal system. Still, there are numerous weaknesses within the judicial system, including the poor or complete lack of training of lawyers and judges, the intervention of external political or economic factors into the judicial decision-making process, and the difficulty of enforcing poorly written laws.

One bright spot is the emergence of legal environmental non-governmental organizations. The most prominent of these organizations is the Center for Legal Assistance to Pollution Victims in Beijing, headed by an energetic and innovative law professor, Wang Canfa. The center trains lawyers to engage in enforcing environmental laws, provides free legal advice to pollution victims through a telephone hotline, and litigates environmental cases. Wang has been quite successful in recovering damages for his clients, although there are many political and legal obstacles, including a reluctance of judges to open what they fear will be the floodgates to class action lawsuits.

IV. Conclusion: Implications for China and the United States

The rapidity and magnitude of the changes that are taking place in China and the complex way in which these changes are interacting and transforming the country leave both the Chinese leadership and the international community searching for an understanding of what China might look like over the next

decade or two. While the environment has certainly moved onto the leadership's agenda over the past decade, it remains far below center priorities such as economic development, maintaining social stability, and enhancing military capabilities.

This suggests that in many respects environmental protection will continue to fall within the purview of local officials and the Chinese people. Positive trends in environmental education, the development of the legal system, and the growth of civil society will all support the ability of Chinese citizens to seek redress or take action to respond to the failure of the government to guarantee their rights.

Yet it is in the interest of both the Chinese people and the world that such advances take place sooner rather than later. This argues for continued significant involvement from the international community in assisting China's environmental protection effort.

For the United States, cooperating with Chinese actors on environmental protection offers the opportunity not only to serve U.S. environmental interests but also to pursue top priorities in the Sino-American relationship: the advancement of human rights and democracy, the development of a more transparent legal system, and greater access to the Chinese market for U.S. goods and services. It is an especially opportune time to pursue such goals given the overall relatively positive state of U.S. relations with China⁶.

Several simple steps could be taken to raise the profile of the United States in helping to shape China's future environmental, political and economic development.

- Remove Restrictions on the Overseas Private Investment Corporation and the U.S. Asia Environmental Partnership, both of which would provide assistance to U.S. businesses eager to gain a foothold in China's environmental technologies market, which is thus far dominated by Japan and the European Union
- Lift the ban on involvement by the United States Agency for International Development (USAID) in China. US AID, with its broad emphasis on governance, public health, rule of law, and poverty alleviation could be especially valuable in addressing China's most pressing needs and the United States' most direct interests.
- Make better use of existing fora for Sino-American partnership on the environment, including the U.S.-China Forum on Environment and Development and the China-U.S. Center for Sustainable Development. Both organizations—the first government to government and the second, a non-governmental organization with several former high-ranking government officials, heads of non-governmental organizations, and business leaders—were established during the Clinton Administration. While both organizations were still in a nascent stage by 2000, the Bush administration now has a unique opportunity to move both efforts forward through both political and economic support. Both organizations are extremely well-qualified to accomplish the public-private environmental partnerships that have served Japan and the EU so well in advancing their environmental and economic interests in China.
- Enhance existing efforts to promote the Rule of Law and Environmental Governance. The State Department's Democracy, Human Rights and Rule of Law program has embraced the environment as one of its primary targets for assistance in China. And the U.S. Embassy in Beijing has thrown its (limited) economic weight behind supporting environmental governance in China. Coupled with work by organizations such as the

American Bar Association and the Woodrow Wilson Center, the United States has established an important foothold in this area. Given the long-term reform benefits of these nascent efforts, however, significantly greater resources-through training, education, and exchange-should be provided to strengthen both the legal and NGO sectors in China. Here, too, the opportunities for public-private partnership are extensive.

¹These international pressures include those brought about by China's participation in international environmental regimes, the desire of many multinationals to ensure that they and their people are operating and living in a safe environment, and China's own desire to present a positive image when it hosts major international events such as APEC or the Olympics.

²China depends on coal to supply almost three-quarters of its energy needs. By contrast, in Japan, the United States, and India, coal accounts for 14%, 22%, and 53% respectively. Moreover, much of the coal burning in China occurs in notoriously inefficient household stoves or small scale power plants, which burn up to 60% more coal than more efficient larger scale plants.

³By law, provincial and local leaders are required to be evaluated not only on the basis of how well the local economy performs but also on how well the local environment fares.

⁴All local environmental protection bureaus are susceptible to such pressure because they are beholden to their local governments for their remuneration, office space, equipment, and perks, such as cars or cell phones.

⁵Chinese environmentalists have specifically cited Hong Kong, Taiwan, and South Korea for exporting their most polluting industries to the Mainland. One recent widely publicized case concerning the toxic waste caused by dismantling computers for their salvageable parts and burning and dumping the rest, however, did involve U.S. companies, who sold their electronic scrap to Hong Kong and Taiwanese brokers.

⁶While the current context of Sino-American relations is positive, there is still sensitivity in many quarters in China to the idea that the United States will push environmental concerns on China in an effort to prevent China's emergence as an economic power. Even seemingly innocuous demands by the international community for monitoring enforcement of international environmental agreements can also provoke claims of infringement on Chinese sovereignty. And, with regard to questioning the environmental implications of China's earlier efforts to promote grain self-sufficiency or the current grand development plans for China's West, claims of national security are occasionally invoked.

China's growing global economic influence and the economic and trade policies it maintains have significant implications for the United States and hence are of major interest to Congress. While China is a large and growing market for U.S. firms, its incomplete transition to a free-market economy has resulted in economic policies deemed harmful to U.S. economic interests, such as industrial policies and theft of U.S. intellectual property. This report provides background on China's economic rise; describes its current economic structure; identifies the challenges China faces to maintain economi...