Policy Watch

China's Growing Ecological Footprint

By Jennifer L. Turner and Linden Ellis

China's 27 years of booming economic growth have brought millions out of poverty and turned the county into the world's factory. However, much of this economic success has been built on a foundation of ecological destruction, leaving China with smoggy cities, black rivers, growing desertification, and degraded coastal waters. The environmental problems today represent serious threats to China's economy, human health, and social stability.

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Most of China's environmental problems stem from heavy dependence on coal and a weak environmental governance system, in which strong local governments routinely ignore the poorly funded and understaffed State Environmental Protection Administration (SEPA) and its local bureaus. China's failing environmental governance system not only poses domestic threats, but also is creating negative environmental impacts regionally and globally. China's far-reaching air pollution, degradation of transboundary waters, and depletion of forestry resources are some of the larger global impacts.

The Litany of China's Environmental Woes

Coal, Cars and Dust Cloud the Air

Largely because of air pollution connected to its cars and coal, 16 of the world's 20 most polluted cities in the world are in China. Every year, air pollution in China causes as many as 400,000 premature deaths and 75 million asthma attacks. China already consumes more energy and emits more greenhouse gases (GHG) than any country except the United States. It is expected to surpass the United States in GHG emissions by 2009. However, because CO2 gasses are long-lived, the cumulative U.S. emissions will still be twice as great as those from China for many years.


http://jamestown.org

Coal fuels 70% of China's energy and is the main source of the country's domestic and transboundary air pollution. Lack of widespread coal-washing infrastructure and scrubbers at Chinese industrial facilities and power plants highlight the potential negative domestic and global air impacts of China's plans to build 562 new coal-fired power stations by 2012. Coal mining is also a highly damaging, relatively unregulated industry in China. For example, the World Bank has dubbed Linfen—a major coalmining city in Shanxi Province—the most polluted city in the world. The coal industry has greatly boosted the Linfen's economic development; however, in the local rural areas crop yields are down significantly and often too toxic to sell. Moreover, city residents suffer from extremely high rates of respiratory illnesses.

China's acid rain from coal burning is impacting two-thirds of the country and may be lowering crop yields by as much as 30 percent. Additionally, SO2 from China is responsible for nearly 50 percent of acid rain in Korea and Japan and particulates and dust storms from China are worsening air quality as far as the U.S. west coast.

Somewhat ironically, in the 1990s as many Chinese cities shifted away from coal to natural gas heating, personal car ownership grew phenomenally (although still quite low when compared to per capita rates in industrialised countries). Today, CO2 emissions from cars have replaced coal as the major source of air pollution in major Chinese cities.

Black Rivers and Dam-building Booms

While the air quality problems are grim, perhaps China's largest domestic environmental challenge is actually the destruction of water resources—a problem that is increasingly impacting neighbouring riparian states. Municipal wastewater treatment rates are abysmally low at 30 percent nationwide and industries are rarely punished for dumping untreated wastewater into rivers. A relatively less-publicized form of water pollution is emissions from largely unregulated concentrated animal feeding operations (CAFOs). CAFOs in China produce 40 times more nitrogen pollution and 3.4 times the solid waste of industrial factories. Ninety percent of animal waste flows untreated into local waterways, often near densely populated areas of the east coast, threatening human health with dangerous metals and bacteria, and creating vast marine and freshwater "dead-zones."

Not surprisingly, these unchecked emissions have left half of China's rivers so polluted that their water cannot be used by industry or agriculture. Twenty-five percent of the Chinese population, mainly in rural areas, is drinking unclean water. Anecdotal evidence indicates that cancer, tumor, and miscarriage rates in many of China's heavily polluted river basins are on the rise.

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China's coastal pollution is also beginning to worry its closest neighbours Korea and Japan. However, a more urgent marine environmental issue is China's growing consumption of fishery products, which is strongly linked to the country's growing freshwater pollution. To meet growing domestic and international demand for fish (China is the biggest exporter of fishery produce in the world) and since few of China's rivers and coastal waters are clean enough to support robust aquaculture production, Chinese fishers and fishery companies have had to expand their fishing in the coastal zones of other countries or the high seas.

Regionally, water pollution and dam building on transboundary rivers have generated serious environmental problems for downstream countries, aggravating relations with other riparian nations. China's damming, pollution, and channelisation of the upper reaches of the Mekong River is perhaps the most sensitive transboundary water situation. Of particular concern to downstream countries is the current boom of dam-building for hydropower—there are 200+ dams in planning or under construction in southwest China, most of which are pushed by local governments and companies that rarely complete the required environmental impact assessments.

What is Being Done

The great irony of China's regional and global pollution is that while it is caused by China's weak environmental governance domestically, it is fuelled in great part by the burgeoning demand internationally for cheap Chinese goods. In short this demand drives China's economic machine and its pollution. For example, there are estimates that 7 percent of China's CO2 emissions are due to production of U.S. imports.

The Chinese central leadership has vowed to significantly reduce air pollution from the energy sector by passing ambitious laws and pronouncements prioritizing renewable energy and energy efficiency, including more fuel-efficient automobiles. China's notoriously weak environmental watchdog agency has been flexing its muscles more over the past two years, pushing for prosecuting firms for toxic chemical spills, cracking down on major polluters or environmentally damaging dam projects, and passing regulations to give the public a greater voice in environmental policymaking.

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Since 1985, the Chinese government has welcomed considerable international assistance to help the country address its severe pollution and natural resource challenges. Multilateral organizations, bilateral aid and nongovernmental organizations have been very active in China working on a broad range of projects ranging, particularly related to pollution from the energy sector (e.g., clean coal, urban transport, and renewables).

Chinese environmental NGOs have begun to take on more sensitive issues such as a national campaign to demand more transparency in dam-building decision-making, assisting pollution victims in class action court cases, and creating an informative website about water-polluting industries nationwide. International green groups also are undertaking ambitious clean-energy and environmental protection initiatives that strengthen local regulators and society.

These highly positive steps, however, ultimately will need to be matched with greater political reforms to promote greater government accountability and transparency to truly improve environmental governance in China.

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