

China's Environmental Policy and Urban Development

From its initial economic reform in 1978 through its liberalization of foreign investment and private sector development from the mid-1980s to the present, China's major economic reforms have given priority to achieving a high rate of economic growth. The policies worked so well that China's constant dollar GDP per capita grew nearly 10 percent a year from 1980 to 2010. This growth performance is unparalleled for a large country, but it has

been accompanied by unaccounted-for costs, including the structural transformation of the economy, social adjustment and migration, and environmental degradation. A new Lincoln Institute book, *China's Environmental Policy and Urban Development*, edited by Joyce Yanyun Man, addresses the last of these topics. It reports estimates from governmental agencies of undocumented environmental costs associated with economic production ranging from 9.7 percent of GDP in 1999 to 3 percent in 2004.

Economic growth in low-income countries is typically accompanied by environmental costs. This tradeoff is embodied in the "environmental Kuznets curve," which postulates that environmental quality deteriorates with economic growth at low income levels and then improves with growth at higher income levels. Estimates of the environmental Kuznets curve for Chinese cities over the years 1997 to 2007 as reported in this book show that measures of industrial pollution in China declined as incomes increased over this period, indicating that cities with higher incomes experienced improvements in these measures of environmental quality as their incomes grew.

Several chapter authors argue that China's environmental policies and performance are in transition. Environmental indicators are improving in response to new policies and regulations while economic growth continues. At the same time, there have been setbacks. For example, extreme events, such as this winter's combination of extremely cold weather and atmospheric inversions in Beijing, produced very high levels of particulate concentrations in that city.

The logic behind the environmental Kuznets curve involves elements of both demand and supply. On the demand side, higher income populations have a growing appreciation for environmental amenities, and they advocate for environ-



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mental improvements. On the supply side, investment in new capacity uses modern equipment with more environmentally friendly processes and more affordable control technologies. China's recent environmental improvements also stem from its strengthened environmental regulatory institutions. In 1982 the role of the Environmental Protection Agency was mainly advisory. It was transformed into a national agency in 1988,

became the more independent State Environmental Protection Agency in 1998, and then was elevated as the Ministry of Environmental Protection in 2008.

The growing influence of central environmental agencies has been accompanied by a change in the style of regulation. The earlier emphasis on command-and-control regulations (such as emission standards) was partially replaced by instruments based on economic incentives (such as taxes on inputs and a newly announced tax on carbon emissions). Research indicates that to date the command-and-control regulations generally have been more effective.

While central agencies set national standards, the responsibility for monitoring and enforcement was largely decentralized to municipal or metropolitan environmental bureaus. The performance of local managers is reviewed annually based on criteria that emphasize economic growth. Additional improvements in environmental outcomes may occur only when these criteria give greater weight to environmental improvements. For example, a rapid increase in the control of sulfur dioxide emissions from power plants followed the inclusion of reduced sulfur emissions as an annual performance criterion.

While China has much to do to reduce urban air pollution, clean up rivers and lakes, and improve energy efficiency, these objectives are becoming more important to its citizens. The increased availability of data on environmental indicators is stimulating the national dialogue on environmental quality. Professor Man's new volume contributes to this dialogue by reporting on progress, identifying immediate challenges, and assessing new policies and regulatory approaches to environmental improvement.

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