

Local Environment Management in China

By Marilyn Beach

For the past 20 years, China's most pressing imperative has been economic development. This priority has driven all policy decision-making in all sectors, and environmental policy has been no exception. The Chinese leadership considers maintaining high employment rates and increasing income as key requirements in the quest for a strong economy, a stable society, and, not least of all, the survival of the Communist Party. Yet unregulated industrialization and urbanization, combined with the absence of effective environmental protection mechanisms have created worsening environmental conditions in China. While Chinese leaders at the central, provincial, and local levels clearly recognize the compelling need to deal with burgeoning environmental concerns, they struggle with the natural tension that exists between facilitating economic growth and promoting a healthy environment.

The course of reform in China has not followed a straight line. Economic, administrative, and environmental reforms are ongoing, fluid, and often lead to unintended consequences. Provincial and local-level political institutions have been given greater authority but often are weak, financially strapped, or inadequately equipped to carry out their new policy responsibilities. Market-driven economic development has led to a shifting power dynamic, visible at the local as well as the central level, as both for-profit and non-profit entities start to have input into policy development and implementation. Reforms also have bestowed citizens with the capacity to

make more decisions about their lives and have created a nearly unparalleled dynamism in the Chinese civil society, which means that citizen pressure is now a source of concern for the central, provincial, and local governments.

This article will address how economic, social, and political reforms, particularly political devolution and decentralization, have impacted environmental protection efforts. Special attention is given to environmental policy implementation at the local government level. The article outlines the major players in this reform process and cites examples drawn from academic articles and reports, as well as from surveys and interviews conducted during the author's experiences directing a three-year exchange project at the National Committee on U.S.-China Relations. The project examined political decentralization and local water management in Heilongjiang and Jilin provinces. The paper concludes with a brief analyses of how—in a more decentralized power system—fiscal and land-use reforms are impacting environmental and natural resource protection at the local level.

MAJOR PLAYERS IN THE GOVERNMENTAL SPHERE

The two decades of reforms spearheaded by China's central government leaders have brought about a greater free market economy, more vigorous trade and investment environments, and high growth rates in China's towns and villages. However, China's natural environment has been detrimentally impacted by

this growth. Moreover, the demands on the already overburdened environmental protection agencies have increased considerably. The reforms, particularly the significant shift of economic and administrative authority away from the central government, have made the power dynamics among different levels of government and bureaucracies, as well as between the government and China's civil society, more complex. Local and central levels of government "must often bargain to reach agreement on distribution of resources and policy implementation issues," in part because each level possesses natural and/or financial resources the other needs (Turner 1997:78). In her analysis of the intergovernmental power dynamics in water management in China, Turner (1997:78) observes that "wealth, economic strategic significance, personal connections, ambition, and acumen of provincial leaders are all factors which determine the amount of bargaining leverage each province can exercise over the central government."

Central Government

At the central level, environmental policy decisions are made through three leading organs. The Environmental and Resources Protection Committee of the National People's Congress (EPRC of the NPC) sets national objectives and generates legislation on the environment and resources, including agricultural production targets. The EPRC is also responsible for supervising the implementation of environmental protection and natural resource laws. The State Environmental Protection Commission of the State Council (SEPC) is an inter-ministerial and interagency institution that represents 48 ministries and commissions.¹ The State

Environmental Protection Administration (SEPA) operates directly under the State Council and is responsible for supervising and managing nationwide environmental protection laws and programs, preventing and controlling pollution and other public hazards, and protecting and improving the nation's ecosystem to promote sustainable development.²

Other central government institutions that play an important role in setting environmental priorities and promulgating environmental policy, laws, and regulations cast a long shadow across many sectors. These institutions include, but are not limited to, the Ministry of Water Resources, the State Forest Administration, the State Planning Commission, the Ministry of Agriculture, the Poverty Alleviation Bureau, and central-controlled offices responsible for major river systems, nature reserves, and seawater.

Provincial and Local Governments

Mirroring other policy sectors, environmental policy authority has become increasingly decentralized in China over the past twenty years. Provincial, city and village governments, local environmental protection offices, and other local bureaus are now assuming greater responsibility in setting environmental standards and implementing measures for environmental protection and resource management (Bohm 2000). Provincial authorities have considerable power; it is they who issue primary directives to local governments and environmental protection bureaus, not the national-level parent ministries or the administrative hierarchy, also known as *xitong*. Provincial Planning Commissions are intimately involved in project planning, especially in the

early project selection, design, and approval stages. In each province, the Party Standing Committee also influences provincial bureaus, including the Provincial Environmental Protection Bureaus (EPBs). Lieberthal (1997) notes how the existing decentralized power structure combined with incentives for local officials to produce rapid economic growth has meant that investments in environmental protection offer fewer rewards. As such, local government officials often shunt environmental protection to a lower priority than moneymaking opportunities.

MAJOR PLAYERS IN THE NONGOVERNMENTAL SPHERE

Chinese Non-Profit Organizations

In China, the number and scope of non-profit organizations (NPOs) have increased dramatically over the last half-decade to over 200,000 by 1996, and their reach is particularly great at the local level (Young and Woo 2000). Notably, many Chinese NPOs have official government sponsors who guide them through the registration process and provide political cover and support for their work.³ While the Communist Party and the government are interested in encouraging the growth of this sector, they are also evidently "concerned about releasing unknown, and potentially uncontrollable, social forces" (Young and Woo 2000:7). Legislation enacted in 1998 outlined new regulations on registration and management of NPOs and established the clearest legislative framework for the NPO sector to date. However, the new regulations fell short of giving NPOs independence from government control.

Environmentally oriented NPOs are still limited in number, but they

are beginning to provide the Chinese society with a vehicle through which to express its concern about environmental issues and to effect change. Most environmental NPOs focus on environmental education and community development work, rarely criticizing central government policy. Environmental and energy policy research tends to be conducted by government organized nongovernmental organizations (GONGOs) and government research centers that are becoming increasingly independent from government support and control. One notable legal research oriented NGO is the Beijing-based South North Institute for Sustainable Development, which also conducts small demonstration projects on biogas energy for small farmers.

Curiously, the social climate in some provinces and cities is more accepting of green NPO/NGO development than in other areas. Environmental NGOs flourish in Beijing, for example. The most well known Beijing groups are Friends of Nature, Global Village of Beijing, and Green Earth Volunteers. Ironically, few such green groups exist in Shanghai and Guangzhou. In the northeast provinces, it is also difficult to find community groups and NPOs/NGOs doing environmental work, but in the southwest this does not seem to be the case. Yunnan and Sichuan Provinces have strong histories of non-profit sector involvement in the environmental protection sphere. For example, the Kunming-based Centre for Biodiversity and Indigenous Knowledge, an independent resource center, promotes collaboration between government and academic institutions and helps build the understanding of indigenous resource management systems.⁴ The Green Plateau Institute in northwest

Yunnan engages in community and sustainable development work. Yet another example of an independent NPO is the Institute for Human Ecology, a Chinese organization based in Chengdu, which undertakes public awareness raising projects and has organized conferences on the greening of industry. (*Editor's Note: See inventory in the back of this volume for descriptions of the activities of some of the green groups discussed above*)

Citizen Interest Groups

While still infrequently covered in the press, there are reports of informal, ad hoc initiatives by citizens working to curb threats to the ecosystem. It is increasingly common for citizens to demonstrate against polluting industries that threaten the health of communities. These public demonstrations sometimes have motivated government intervention to resolve environmental disputes and punish offenders. For instance, the threat of extinction of Tibetan antelopes has brought about vigorous citizen involvement against poaching, which, in turn, has drawn attention from the Chinese government and international organizations to the poaching problem. In another example, a Chinese nature photographer publicized pictures and a story on how deforestation in Yunnan province threatened the habitat of the endangered snub-nosed monkey. His photographs sparked public outcry against logging in and around the monkey's forest homes, leading to national action to enforce stricter deforestation restrictions in that region.

Student environmental organizations are another kind of citizen interest group. These student groups are less easily hemmed in or restrained by the political difficulties facing independent NPOs. Student

groups are also growing at a fast pace within universities and colleges—today there are nearly 80 such student “green” groups.

The Chinese News Media

The Chinese news media plays an important role in promoting official environmental policy and putting pressure on violators to change their behavior. China has an impressive record of environmental journalism and many of its most active environmentalists have come from the news profession. Newspaper, television, and radio reports on environmental issues abound. In 1996, China's seventy newspapers published over 17,000 environment-related articles (Wen 1998). The Chinese environmental NPO movement relies heavily on news media coverage to publicize and influence citizen awareness and behavior. Some of the most influential NGOs are actually environmental media programs, such as Global Village of Beijing.⁵

The China Environment News (CEN) and the *Green China Times (GCT)* are China's quasi non governmental run newspapers dedicated to covering environmental issues. These two national newspapers are affiliated with government agencies—*CEN* is linked to the State Environmental Protection Administration and *CGT* to the Forestry Bureau. However, as part of the decentralization reforms, they must raise most of their own money and have each gained considerable freedom in reporting and monitoring environmental conditions and policy. While government employees and environmental researchers make up most of their readership, both papers have begun to create publications aimed at raising broader public awareness of the environment.

The relative freedom of environ-

mental journalism can be explained in part by the fact that the government recognizes how useful green reporting can be in promoting its own environmental protection policies. In the past few years, for example, local governments have begun to disclose pollution data to a public long accustomed to secrecy of such facts. In Beijing and other cities, the news media now regularly reveals the latest pollution statistics. Building public support for environmental policies is very important, especially when the policies that might protect the environment could put people out of work. The news media has collaborated with the government in creating a national esprit de corps, which can be seen in cases such as the forced closing of a rural factory that employs hundreds of people but badly pollutes the air or water.

FOREIGN INSTITUTIONS

International Nongovernmental Organizations

In China, international environmental organizations work on issues that concern China and the international community, such as energy efficiency policy and curbing greenhouse gas emissions, as well as local poverty alleviation and ecosystem preservation issues. Many international NGOs actually prefer working at the local level. For example, the International Crane Foundation and The Trickle Up Program provide an excellent model of the kinds of environmental work international NGOs can successfully conduct at the local levels in China. These two organizations work in villages in Guizhou Province's Caohai Wetlands Nature Reserve and the goal of their jointly administered project is to promote the creation of income generating activities for rural resi-

dents of villages surrounding the wetlands so that subsistence farming will not encroach on the wetlands. These wetlands happen to be home to cranes and other endangered migratory birds. Currently nearly 40 U.S.-based NGOs operate environmental or energy projects in China, including the National Committee on U.S.-China Relations, the Mountain Institute, the World Wildlife Fund, and The Nature Conservancy. Foreign foundations, such as the Energy Foundation, the Ford Foundation, W. Alton Jones Foundation, and the Rockefeller Brothers Fund have also supported many projects in China with a focus on local environmental issues.

Bilateral and Multilateral Aid Organizations

Donor institutions such as the World Bank, Asian Development Bank, Japan Development Bank, United Nations Development Programme, and bilateral aid organizations such as the Canada International Development Agency and the Swedish International Development Agency have also been active in China—especially in financing major environmental infrastructure projects such as water and waste treatment facilities. Most work of bilateral and multilateral institutions is done with the Chinese central government agencies and this work tends to be highly visible, as opposed to the activities these international organizations undertake with provincial-level government entities.

Foreign Investment and Donations

Foreign firms providing capital and equipment to China, especially in the energy field, will generate some environmental benefits. The

main benefit will be a more efficient Chinese power sector (McElroy et al. 1998). International corporations working in China have contributed large sums of money for environmental protection, as well as for emergency relief, education, research, training, health, and social development. For example, Exxon Corporation donated \$1 million to the United Nations International Children's Education Fund for health, water, and education programs in the western regions of Xinjiang and Qinghai, where the company is involved in Tarim Basin oil exploration (Young and Woo 2000). British Petroleum has funded programs to develop and test environmental education teaching materials, and Honeywell currently aids research being conducted at the NGO Beijing Energy Efficiency Centre. United Technologies has donated funds to promote environmental education and international cooperation in three Chinese cities, a project implemented by the National Committee on U.S.-China Relations.

There is growing diversity in both domestic and international environmental organizations working in China. The next section explores how these various Chinese and international organizations shape local-level environmental management in an increasingly decentralized polity.

ENVIRONMENTAL POLICY DYNAMICS AT THE LOCAL LEVEL

Twenty years of economic reforms have ignited major changes in the political, industrial, and social spheres in China. Moreover, these reforms also have impacted the capacity and incentives of local governments to carry out environmen-

tal policies. As China's economy has grown, local governments have faced incredible challenges. Since 1983, more than 300 cities and 13,000 villages have been newly created which explains how from 1982 to 1993 the urban share of the population grew from 21.1 percent to 28.1 percent. The urbanization rate is even higher today due to sustained, massive rural-urban migration (Wong 1997). While rapid urbanization brings more economic opportunities, it also brings more CO₂ exhaust, garbage, and sewage to China's urban and rural landscapes. Quality of life and human health are severely affected by urban environmental degradation. The growth of Chinese cities has elevated the importance of the field of municipal planning, and city mayors have been given new powers to oversee the development of urban environmental infrastructure.

Political Dynamics: Post-Deng Reforms and the Power Shift to Local Governments

The reform period has ushered in a new role for provinces and localities. Provincial power is no longer limited to carrying out administrative functions on behalf of the central government. Provinces have increasingly adopted economic roles and "the centre has voluntarily reduced its own role in the process" (Hendrischke 1999:6). While the central leadership retains the power to determine the overall direction of policy, decision-making for major policy areas has shifted to the provinces.

A number of factors have driven this trend towards political decentralization in China, among them economic growth, accompanying disparities among the regions, and the growing complexity of the Chinese nation. Legal and fiscal devel-

opments have also brought about growing provincial and local independence. Provinces no longer “owe their political and economic existence to the central government” (Hendrischke 1999:7). China’s political and economic landscape has, and will continue, to change due to the new economic role of provinces on top of their continued administrative role. Whereas in the past the central government could justify political intervention on economic grounds, the situation is changing. Hendrischke (1999:7) points out “as provinces are cut off from central support and become economically self-reliant, they have no choice but to pursue their own interests by asserting their own economic identity.”

Thus far, authorities in Beijing have accepted these changes in power distribution as a necessary part of reform and development in a modern, industrialized, governmental structure. According to Feinerman (1998:17), the new distribution of power “seeks to accommodate just enough regional power to maintain Party and national State hegemony at the apex of a widened political pyramid.”

The decentralization of power has produced more competition between and among provinces and sub-provincial entities, due to the struggle to secure limited resources. Competition is also evident in growing regional disparities seen in China, which threaten to undermine China’s long-term development. The decentralization of investment decision-making has already permitted the fast developing coastal provinces to reinvest their wealth to further accelerate local investments (Chung 2000). Poorer localities naturally do not have a comparable revenue base. This has far-reaching implications for envi-

ronmental conditions, because environmental infrastructure, including water treatment plants and sewage systems, are to a large extent funded by industry.

Another change in China’s political power structure is the recent administrative reform, which has reduced personnel across bureaucracies at all levels by approximately 50 percent. As a result, a large vacuum exists in several bureaucracies with short-staffed offices. Some of the laid-off bureaucrats take advantage of their wealth of experience and knowledge and shift to work in non-governmental or quasi-governmental organizations. This trend is helping to build a more complex civil society with many more voices, but it has also left some government agencies that handle environmental and natural resource management short staffed.

Locals Take Charge

The limitations of centralized planning, the failure of many state-owned enterprises, a burgeoning industrial scene throughout China’s countryside, fiscal crisis at the central government level, and the increasing needs for local governments to encourage economic growth are all factors that are changing how China’s central government and local authorities determine environmental priorities and manage the environment. Provinces and municipalities now control many of the investment decisions, and they strive to spread the benefits of economic development, remove bottlenecks to further growth, consider a range of financing sources, and look for potential business opportunities. By increasing incomes, ensuring low unemployment rates, and maintaining stability, local government officials gain legitimacy of the citizens. Notably, government officials in eco-

nomically successful locales are better able to garner favor of authorities one level up. In light of these benefits of economic growth, it is understandable to see why local government officials do not prioritize costly environmental protection investments.

The lack of motivation to implement expensive environmental protection policies is also greatly impacted by the lack of central control and coordination in enforcing strict standards throughout China. While it can be argued that the central government could intervene at any time to prevent abuses at the local level, China’s enormous size and complexity makes thorough oversight difficult, if not impossible. Moreover, local and provincial officials often complain that they do not always know the content of the latest laws and regulations, and they often are unable to interpret the laws they do read. This lack of legal knowledge combined with the fact that many local power holders possess goals inconsistent with environmental protection targets help explain the limited success of numerous environmental policies.

In addition to economic development being the main priority, environmental protection laws at the local level face several other constraints. Chief among these constraints is the nature of the power structure at the local level. Corruption threatens efficiency and local-level power and discretionary decision-making often determines whether or not specific projects are given a green light or any chance of success. Many corrupt officials at the local level do not care about environmental conditions and will take bribes to overlook infractions. Such corruption is made easier due to the lack of clear distinction between government responsibilities and en-

terprise operations. This blurring of division between public and private duties leaves open the possibility of discretion (and incentives) in overlooking violations (Bohm 1998).

Another constraint hindering effective implementation of environmental laws relates to local government capacity, such as lax fiscal discipline, the lack of proper accounting of local finances, poor administrative capacity, and insufficient technical training of government employees. However, there are individual local power holders throughout China who possess a heightened awareness of the importance of protecting the environment and are able to effectively promote environmental goals even when facing the challenges of limited local government capacity. One such positive example is the Vice Mayor of Mudanjiang, who has worked very hard to use his power to push important water management projects through to fruition and to successfully lobby for the appointment of environmental protection staff that is well trained and committed. There are other such local policy entrepreneurs who see the long-term value in protecting the environment for their local development, but lack the necessary political, economic, and human resources to carry out their visions. One major step the central government could undertake to help such local officials would be to invest in the development of effective and independent monitoring and enforcement mechanisms at the local level.

LOCAL GOVERNMENT AND INDUSTRY

Government

The dynamic between industry and government at the local level has a strong impact on how environmental policies are carried out. His-

torically, industry instead of government has been responsible for many environmental controls, creating a system in which enforcement is dependent not on an independent regulating body but on individuals within the industry making independent decisions. In reality, when it comes down to implementation, the entities that pay salaries hold power at the local level.

The Chinese pollution levy system (PLS) provides insight into the distribution of decision-making and implementation capacity between the central and lower levels of government. Production units and industries in China, not state agencies, have been responsible for controlling emissions since 1979 when the PLS was first established as an emissions tax and pollution control funding system.⁶ Administration of the PLS is handled not by an independent environmental authority, rather by provincial and local authorities. Specifically the PLS is administered by the production units within industries that produce the emissions PLS is meant to control. Herein lies the contradiction and conflict in effectively implementing emissions controls: the same officials overseeing emissions control are also responsible for promoting a vigorous level of economic and industrial development. Under the PLS industries pay fines to the local Environmental Protection Bureaus (EPBs) and the bulk of these revenues are recycled back into the polluting industry to provide capital for the installing pollution control equipment (Bohm 1998). Some of these revenues are also retained by the local EPBs and serve to boost their independence. Another unintended outcome of this PLS policy is that it is in the interest of local EPBs for industries to keep polluting so they receive revenue.

Throughout China there has been little systematic environmental awareness building for either local officials or industry leaders. Local officials themselves are aware that they lack knowledge and skills to combat environmental hazards. One of the problems is that economic reforms have led to an explosion of small-scale industries that do not adhere to pollution emission standards. These industries are very hard to regulate because of their vast numbers and the amount of bribes they give to evade environmental regulations. Environmental protection officers charged with enforcement are also under-motivated to do their jobs for a variety of reasons, including low pay and poor training opportunities. This author's Chinese colleagues in remote regions of Northeast China recognize the need to link conservation to such pocketbook issues, but lack the resources to increase funds to their EPBs.

Another obstacle to efficient environmental policy implementation relates to the administrative structure, in which institutions at the local level must report to their parent institution within the *xitong* one level up. Within this reporting system there is inadequate coordination between and among institutions within villages and even provinces. These weak institutional links make an overall environmental protection strategy within a locality or province very difficult. Moreover, even within environmental protection agencies there is often competing interest for project work, which means that the most appropriate department might not necessarily be assigned to a specific task. Because of the traditional linkages to communicate only with one's parent agency above, there is a significant lack of communication among

local government agencies. For example, within a county government it is not uncommon for the water bureau to be unaware of the water quality work being done by the county EPB. This lack of horizontal linkages leads to overlap and uncoordinated efforts in pollution control and natural resource management efforts at the local level.

Lack of horizontal linkages also produces conflict between local governments. For example, the Zhalong Nature Reserve, a national-level protected wetlands area in Heilongjiang Province, shares the same watershed system that supplies the nearby city of Qiqihar and the oil field city of Daqing. Because of closures of large state-owned enterprises in this area, the Daqing and Qiqihar city governments both face large challenges of providing employment for their citizens. Naturally, the city governments also need to guarantee access to water for domestic and industrial use. Due to the lack of horizontal linkages to mediate, the demands for water by these two cities have led to conflicts over water use and long-range planning for the nature reserve.

Industry

Industries in China are rapidly expanding and drawing from the natural resource base and in the process generating greater emissions and more waste. The magnitude of industrial pollution underlines the critical need for China to create and enforce effective environmental protection and conservation policies. Currently, industries do not have the capacity to effectively monitor pollution emissions and implement controls, nor do they have sufficient will to do so. From the viewpoint of industrial leaders, the lack of clear laws gives them substantial latitude for interpreting laws and regula-

tions. Those in industry have been known to offer bribes to officials monitoring environmental protection standards. Even if industrial managers did understand that polluting and wasteful consumption could be detrimental to their business in the long run, most lack sufficient environmental education and training to comply with environmental laws and regulations.

A good example of how local government and industry contradictions and difficulties hinder the promotion of local environmental protection can be seen in the field of wastewater treatment in remote regions. Many hotels and facilities dump untreated waste into scenic rivers and lakes throughout China. Local authorities encourage the development of tourism for local economic development, but may not yet recognize that water pollution discourages a thriving tourism industry. Therefore, local officials and industries throughout China must consider the potential economic opportunity costs of ignoring the pollution problems. They must weigh choices such as whether to accept poor tourism rates or investing in expensive wastewater treatment facilities.

In order to promote such tourist destinations, local and provincial officials might be able and willing to put pressure on industries and small businesses to protect the environment. While the desire to promote tourism may lead local governments and industry to keep water clean, promoting tourism can solve not all environmental problems. For example, a nature reserve that is home to an endangered species might actually be hurt if the area became a popular tourist destination. Such a case would demand protective policies, as well as investment by the Chinese government and interna-

tional agencies, rather than the Chinese business sector.

Citizen Awareness and Social Expression

Until recently, there has been little formal inclusion of community members in the public policy process in general, and environmental policy is no exception. Anecdotal evidence collected throughout a National Committee on U.S.-China Relations sponsored three-year exchange project with government officials in northeast China from 1998-2000 revealed that community voices are not yet recognized to be valuable in the policymaking process. Moreover, officials sometimes mistrust community interests and feel citizen viewpoints are not valid.

Nevertheless, some modest but positive signs indicate that this attitude by local government officials might be changing slowly. In 1999, the National Committee on U.S.-China Relations led a two-week study tour in the United States for eight local-level environmental protection and water management specialists from Northeast China. During the study tour, the most convincing lesson for the participants was one that related to money. Specifically, the group saw numerous examples in the United States that when communities are involved in the planning and implementation, government-led environmental protection efforts are not only more effective, they are often much less expensive.

Rising environmental awareness of citizens and officials, especially those in urban areas, is beginning to encourage governments at all levels in China to consider how to harness and direct the motivation and resources of the public to promote change. However, such citizen in-

involvement is unlikely in poor, rural areas, for these populations have a low level of environmental awareness and they do not have the resources to remedy industrial and agricultural pollution. It is often the rural residents who deforest their land and do not practice sustainable agriculture. It should be stressed that the lack of incentives to protect agricultural land stems in great part from the lack of secure land tenure ar-

ing of natural resource management and environmental protection in China's provinces, cities, and villages. A window into these changes, especially at the local level, sheds light on how the state and society interact and the likelihood that environmental conditions will improve when controlled by better-financed and empowered local stakeholders.

The central government can no

The central government can no longer afford to pay for infrastructure improvement and capital inputs for the provincial and sub-provincial level projects, including environmental infrastructure, social services and education.

rangements. The issue of new land tenure laws and how they could promote better land management will be discussed later in this paper.

SPECIFIC REFORMS AND THEIR EFFECTS ON LOCAL ENVIRONMENTAL MANAGEMENT

The above discussion of China's environmental regulatory framework and the institutional actors involved sets a general backdrop for some of the most important reforms that could influence the local environmental protection dynamics. The next section analyzes reforms addressing fiscal arrangements and local land administration laws, both of which reveal how current policy changes could play out at the local level.

Fiscal Reforms of 1994

While some episodic and localized study has been devoted to decentralization and political devolution, there has been little systematic examination of the effects decentralization has had on the financ-

longer afford to pay for infrastructure improvement and capital inputs for provincial and sub-provincial level projects, including environmental infrastructure, social services, and education. Such infrastructure development needs are enormous in China's rapidly urbanizing centers, where an estimated \$1 trillion in investment will be needed over the next decade (Yu and Jin 1997). Localities, especially in poor regions, are often not provided with the means to pay for what the central and provincial governments have mandated. In the environmental protection and natural resource management spheres this includes monitoring and enforcing a growing number of air and water emissions regulations, building water treatment plants, installing water meters, and issuing water withdrawal permits. In short, Chinese localities desperately need to invest in environmental infrastructure and regulatory and enforcement mechanisms to meet the demands of the growing economy, but they lack the means to pay for such investments.

Reforms and emerging market forces in China have led to changes in local public finance, developments that could potentially affect local investment in the environment. In the 1980s, China's policymakers began to realize that the state fiscal system—which was designed to function within a centrally planned economy—was ill suited for the evolving decentralized decision-making institutions and free market economy. Under the old system, central government taxes were gathered by weak local collection methods and often were not passed up to Beijing.⁷ By the 1990s it was clear that a revamping of the center-provincial revenue sharing arrangements was necessary (Lo 1999).

The fiscal reforms that began in 1994 aim to increase revenue for the central government and make the spending process more efficient for growing provincial economies. The current system represents a reduced role for the provinces in revenue collection, but greater responsibility for revenue expenditure when compared with the pre-reform era. Additionally, local budgets are now left to the discretion of the provinces. These reforms have had several immediate effects. Provinces now have a reduced role in collecting the funds, but more control over project selection and spending. In the environmental sphere these reforms have given local governments more responsibility in identifying priority environmental projects, raising funds, and implementing them.

Today, half of all budgetary expenditures of the government occur at the local level (Wong 1997). Moreover, the Asian Development Bank recently reported that local governments manage approximately 85 percent of China's extra-budget-

ary funds (Narayan and Reid 2000). Despite this high percentage of local government spending, the total amounts are insufficient and the prospects for local governments increasing their revenue streams are limited. Local sources of revenue have been poorly developed in China, and taxes and fees for services are grossly inadequate to cover costs of services such as water and sewerage. Another hindrance to raising needed funds is the fact that the central government does not allow sub-national units of government to issue bonds or take on loans, even though securing these loans poses no risk to the central government. The growing financial struggles of local governments to address pressing infrastructure needs (e.g., wastewater treatment facilities) has prompted the Ministry of Finance to discuss local infrastructure finance issues, but the outcome of these talks remains unclear. Discussions have occurred on establishing a government-led ratings institution to assess the fiscal health of cities, possibly in anticipation of new regulations regarding local bond issues.

As fiscal reforms continue, empowering appropriate local institutions and adopting sensible fiscal management procedures are critically important as China's provinces, municipalities, and localities are called upon to play a more substantial role in the planning and management of public infrastructure and the delivery of services. Environmental services feature prominently on this list, which includes water supply and wastewater treatment, district heating, solid waste collection and disposal, energy supply and efficiency, local and regional transportation, and education and social service facilities (Wong 2000). Until more flexible financial author-

ity is granted to the lower level, the local governments will remain burdened with too much responsibility without the financial capacity to meet the needs and expectations of society and government.

The above dynamics surrounding the still incomplete fiscal reforms can be seen in Zhejiang Province's water sector. Turner (1997:85) argues "the ten year plan document from Zhejiang Province appears to contain mainly principles of water use and a list of water project investment plans. This document reveals that it is the sub-national level government which are required to generate most of the funds for water work, particularly project construction." As the central government mandates to do more projects increase, state funding at all levels for agricultural water projects has diminished. (Turner 1997:85) notes "simultaneously, the central government has demanded increases in agricultural production so as to fuel the economic reforms and propaganda campaigns stress that agriculture must not be neglected and that water bureaus play a key role." Water bureaus in villages and townships are therefore caught between conflicting and unrealistic demands for managing water.

Land Tenure Law of 1998

One of the most serious threats to environmental quality in China is one that is also least discussed—the quality of agricultural land and rural environmental conditions. Decisions over land-use allocations are usually made at the local level, instead of at the provincial or central level. Such decisions are important in determining whether or not the right incentives are in place for land users to protect the land's natural conditions.

The central government has re-

cently instituted an important yet little reviewed reform that is designed to provide 30-year land-use rights to the farmers. The 1998 Land Reform Law has the potential for providing incentives for nearly 200 million farm households to invest in long-term soil protection and for pushing protective measures related to water and air pollution reduction, irrigation, drainage, and soil improvement (Prosterman, Schwarzwald, and Ye 2000; Wu 2001). The potential for this reform vis-à-vis the environment lies in the increased confidence farm households will have over long-term control of land and water resources. The Rural Development Institute (RDI) and Renmin University are conducting field surveys to determine the effects of the reform so far.⁸

To date, evidence suggests that farmers with signed copies of the new land-use contract felt their power over local cadres had increased, and they therefore had more control over land-use decisions and long-term tenure security. This is in contrast with farmers who either had not signed a contract at all or had signed but not received a copy of the contract. The written contract has the potential effect of taking power over land-use decisions out of hands of local cadres and transferring that power to farmers. At local levels, farmers often see local officials prioritizing and deriving local economic benefit from the land. Local officials have an incentive to do so, as money made from the sale of land and taxes goes to the village government coffers. It is not surprising, therefore, that farmers were more confident in future readjustments to the land-use contracts when determined by the central government as opposed to those made by local cadres.

However, not all of the prelimi-

nary news is positive. The most disturbing results of RDI's field survey show that most farmers were not confident that they would receive the full 30-year land-use term to which they are entitled free from land readjustments. In a recent RDI study the authors argue that if farmers were not free from land readjustments they would lack the assurance of tenure security that would lead to additional investments on the land. This would mean a defeat of primary purpose of the Land Management Law in granting 30-year land-use rights (Bledsoe and Prosterman 2000).

CONCLUSION

Decentralization with insufficient attention to rule of law and capacity building has had an adverse effect on the quality of local environmental conditions and agricultural land and threatens to undermine many of the very positive environmental policies and laws created over the past twenty years. Without increasing the capacity of and resources for local governments, their efforts to protect the environment will continue to be seriously hindered. In a series of interviews this author conducted from 1998 to 2001, numerous Chinese officials and researchers identified one method for mitigating the capacity problems at the local level. Specifically, they stressed the need for extensive environmental education and training for government officials, industry employees, and primary and secondary schools. Although local government policy encourages such educational initiatives, little financing of programs has been seen to date, although SEPA's Environmental Education division has begun to support local initiatives.

On a more positive note, China's educational and research institutions are gaining in capacity and influence. Most do not play an official role in determining environmental policy, but they are assuming a stronger role in advising both the public and private sectors through consulting assignments. The People's University Rural Development Institute in Beijing is one of many educational institutions that combine academic research and rural development project experience in China's interior. Regionally-based institutions, such as the Chinese Academy of Sciences' Institute of Geography and the Northeast Normal University's Institute of Environmental Sciences, both based in Changchun, Jilin, also have impressive research and training agendas and have been quite responsive to the specific needs of the region. As mentioned at the beginning of this paper, the small, yet active environmental NGO community in China focuses much effort on environmental education initiatives for citizens. Some of these NGOs have begun to build partnerships with local governments, which enable NGOs to assist local officials in implementing environmental policies.

The central government also must play a stronger role in building local government capacity to implement environmental and natural resource laws. Wong argues, "environmental protection, given the externalities, should not be a purely local responsibility" (Wong 2000:62). Therefore, in addition to capacity building work, the central government in China will need to grant local governments greater freedom in raising funds for local environmental infrastructure projects. The central government also needs to increase its ability to give incen-

tives for local governments to comply with pollution control and conservation laws.

While Chinese policymakers at all levels will need to fully assess the effects of economic development on the country's environment and continue to take steps to strengthen the environmental regulatory framework, there are roles in this arena for foreign government and international NPOs to build the capacity and training of local officials, Chinese NPOs, and industry leaders in a variety of areas such as regulation setting, emission trading pilot projects, and monitoring techniques.

Marilyn Beach directed the National Committee on U.S.-China Relations Civil Society project, which explored decentralization's effect on local environmental protection in China's northeast, and privatization and its effect on education in Guizhou. She is a Program Associate with the National Committee on U.S.-China Relations and can be reached at: mbeachnc@hotmail.com.

References

- Bledsoe, David J. and Roy L. Prosterman. (2000). *Policy, the rule of law, and rural land reform in China*. Seattle: Rural Development Institute.
- Bohm, Robert A. (1998). "Environmental taxes: China's bold initiative." *Environment* (September).
- Chung, Jae Ho. (2000). Regional disparities, policy choices and states capacity in China." *China Perspectives*, 31, (September-October): 36-51.
- Feinerman, James V. (1999). "The give and take of central-local relations." *The China Business Review* (January-February): 16-21.

Hendrischke, Hans and Feng Chongyu. (1999). (Eds.). *The political economy of China's provinces: Comparative and competitive advantages*. London: Routledge.

Knup, Elizabeth. "Environmental NGOs in China: An overview." *China Environment Series*, 1: 9-15.

Lieberthal, Kenneth. (1997). "China's governing system and its impact on environmental policy implementation." *China Environment Series*, 1: 3-8.

Lo, Chi. (1999). "China's fiscal time bomb." *The China Business Review*, (September-October): 16-19.

McElroy, Michael B., Chris P. Nielsen, and Peter Lydon. (1998). (Eds.). *Energizing China: Reconciling environmental protection and economic growth*. Cambridge, MA: Harvard University Press.

Narayan, Francis B. and Barry Reid. (2000). *Financial management and governance issues in the People's Republic of China*. Manila, Philippines: Asia Development Bank.

Prosterman, Roy, Brian Schwarzwalder, and Ye Jianping. (2000). *Implementation of 30-year land use rights for farmers under China's 1998 land management law: An analysis and recommendations based on a 17-province survey (A synopsis)*. A report from the University of Washington School of Law and the Rural Development Institute, (March).

Prosterman, Roy and Tim Hanstad. (2000). *Rural land reform in China benefits not only China, but also the World*. A report from the University of Washington School of Law and the Rural Development Institute, (June).

Prosterman, Roy, Tim Hanstad, Brian Schwarzwalder, and Li Ping. (1998). *Rural land reform and the 1998 land management law*. Seattle: Rural Development Institute.

Prosterman, Roy and Brian Schwarzwalder. (1998). *Implementation of 30-year use rights for rural land in Henan Province: Fieldwork*

results. Seattle: Rural Development Institute.

Schwarzwalder, Brian. (2000). "China's farmers need long-term land tenure security, not land readjustment." *Transition*, (August-October).

Turner, Jennifer L. (1997). *Authority flowing downwards? Local government entrepreneurship in the Chinese water sector*. PhD. Dissertation Indiana University.

Wang Hanchen and Liu Bingjiang. (1998). "Policymaking for environmental protection in China." In Michael B. McElroy, Chris P. Nielsen, and Peter Lydon. (Eds.), *Energizing China: Reconciling environmental protection and economic growth*. Cambridge, MA: Harvard University Press: 373-405.

Wen, Bo. (1998). "Greening the Chinese media." *China Environment Series*, 2: 39-44.

Wu, Douglas. (2001). "A quiet property rights revolution." [On-line]. Available: www.chinaonline.org.

Wong, Christine P.W. (2000). "Central-Local relations revisited." *China Perspectives*, 31, (September-October): 52-63.

Wong, Christine P.W. (Ed.). (1997). *Financing local government in the People's Republic of China*. Hong Kong: Oxford University Press.

Wong, Christine P.W., Christopher Heady, and Wing T. Woo. (1995). *Fiscal management and economic reform in the People's Republic of China*. Hong Kong: Oxford University Press.

World Bank. (1997). *Clear water blue skies: China's environment in the new century*. Washington, D.C.: The World Bank.

Young, Nicholas with Anthony Woo. (2000). *An introduction to the non-profit sector in China*. Hong Kong: Charities Aid Foundation.

Yu, George, and Hui Jin. (1997, July 28). "Project financing faces a squeeze in China." *The Asian Wall Street Journal*: 12.

Endnotes

¹ The State Environmental Protection Commission's responsibilities include: examining significant issues of principle, policy, and measurement that arise in the developing both environmental protection and the economy; assisting the State Council in reviewing economic development policies and plans; directing and coordinating the resolution of major environmental problems; prompting enterprises and local government to carry out environmental protection laws and regulations; organizing the monitoring of environmental laws and regulations; and organizing and coordinating scientific research on environmental protection (Wang and Liu 1998).

² For more detailed description of SEPA, see Wang and Liu, 1998.

³ For a more detailed look at the development of Chinese environmental NGOs, see an article by Elizabeth Knup (1997) entitled "Environmental NGOs in China: An Overview."

⁴ To learn more about the Center for Biodiversity and Indigenous Knowledge, please contact Xu Jianchu, Director, tel. 86-871-412-3519; fax: 86-871-412-4871; email: CBIK@public.km.yn.cn.

⁵ Global Village of Beijing was established by Liao Xiaoyi in 1996 using personal savings supplemented by small grants from Western and multilateral organizations. Global Village produces a weekly television series and publishes written articles about environmental issues with the goal to increase citizen awareness.

⁶ See *Environment*, "Environmental Taxes: China's Bold Initiative" by Robert Bohm, September 1998 for a thorough explanation of the Pollution Levy System.

⁷ For a thorough examination of the fiscal reforms of 1994 and its effect on China, see Christine Wong's studies (2000, 1997, 1995) on local finance, cited in bibliography.

⁸ For more information about the Land Use Law of 1998, see publications by the Rural Development Institute (Prosterman and Hanstad 2000; Prosterman, Hanstad, Schwarzwalder, and Li, 1998; Prosterman and Schwarzwalder 1998; Schwarzwalder, 2000) or contact RDI at: tel: 206-528-5880 or rdi@u.washington.edu.