

Industry, Pollution And Environmental Enforcement In Rural China: Implications For Sustainable Development

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ABSTRACT: The severity and scale of China's industrial pollution problems are well known. It is generally agreed that, while national emissions standards and pollution control policies are in place, the problem of enforcing standards at the local level is key to long-term environmental sustainability. Using data from recent ethnographic research, this article examines the process of pollution control and oversight in a rural township in Sichuan Province, which ultimately resulted in the closure of local factories by the

district Environmental Protection Bureau. These factory closures, underpinned by a growing scientific and political consensus in China about the importance of environmental sustainability, encourage us to rethink governmental commitment to environmental protection. This article suggests, however, that different government agencies subscribe to divergent models of sustainability, and that these models have important consequences for determining how environmental protection is defined and implemented. The implications of increased environmental enforcement of rural enterprises for ecological health, fiscal revenue, and rural development are also discussed.

Introduction

Noting the poor state of environmental protection in China, recent scholarship sees the implementation of sustainable development as a constant struggle between environmentalist citizens' groups, who seek to "green" China, and the state, which seeks to suppress environmental protection in order both to sustain the country's high rate of economic growth and to prevent the spilling over of environmentalist action into the arena of national politics, which could become a direct affront to state power (Vermeer 1998; Lo and Leung 2000; Dai and Vermeer 1999). However, recent speeches by high Communist Party officials, including former President Jiang Zemin, point to a shift toward a new discourse of environmental sustainability on the part of the central government in Beijing. This discourse borrows heavily from the international discourse of sustainability that gained momentum after the 1987 World Commission on Environment and Development, which popularized the phrase "sustainable development." When viewed in the light of China's growing framework of environmental law, and recent actions taken by the State Environmental Protection Administration (SEPA) to stop the development of large-scale projects that threaten to have massive environmental impacts (Renminwang 2005), this discursive shift signals the Chinese

Communist Party's willingness to acknowledge the importance of environmental sustainability in its development goals.

For the past quarter-century, Chinese leaders have placed the country on a path toward capitalist development and integration in the world economy. Liberal economic policies known as "reform and opening" (*gaige kaifang*) have had far-reaching effects on agricultural output, industrial production and foreign trade, making China one of the largest economies in the world. One of the main driving forces behind this economic growth has been the rural industrial sector, which is comprised of millions of small-scale factories employing more than 135.7 million workers (China Township and Village Enterprise Yearbook Editorial Committee 2004). However, there is a growing consensus among scholars and policymakers that rapid industrialization of the countryside has proven ecologically disastrous; air and water pollution now threaten the health of China's 800 million rural residents and undermine many agrarian ecosystems (Ren and Li 2002; Ho 2000).

The rural industrial sector thus represents one of the most salient environmental and health risks currently faced by China's population. Because of its role as the engine of economic growth in the countryside, it also represents a focal point in the growing controversy over sustainable development. In this paper we examine the discourse of sustainability within the central government of the People's Republic of China and present a case study from a township in Sichuan Province in which officials from the Environmental Protection Bureau (EPB) ordered the closure of local factories for failure to comply with national emissions standards. The case study allows a close examination of the ecological, economic and social consequences of environmental enforcement for a rapidly developing rural community. The paper is based on data drawn from 60 interviews with EPB officials, township government officials, industrial managers and local residents. These primary data are supported by a review of township and district financial

records and participant-observation in the study community during seven months of field research from 2001 to 2006.

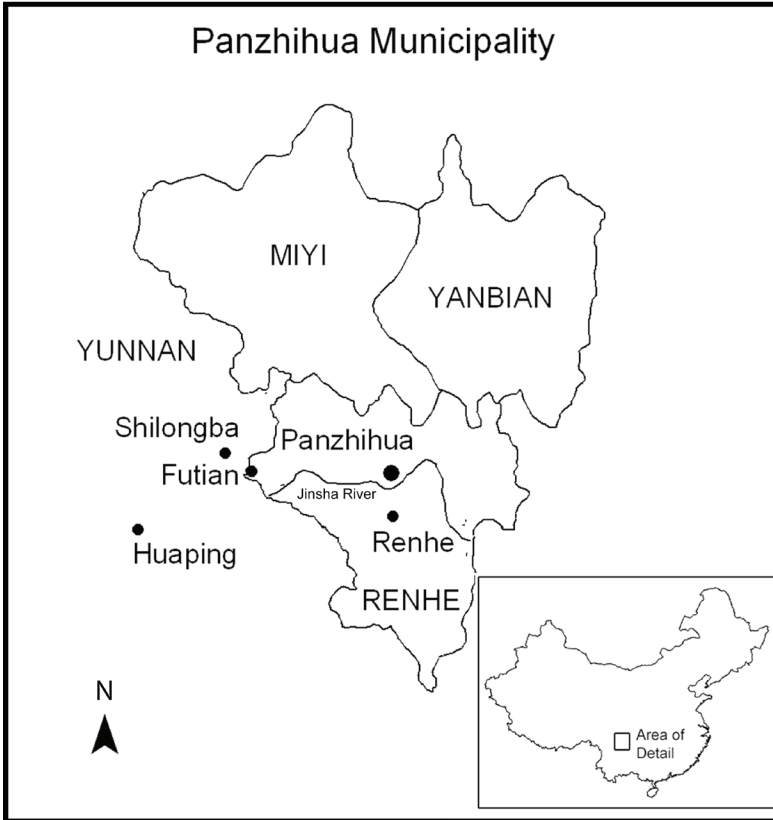
The paper is organized as follows. First, we describe our case study site in Sichuan Province and place it within the context of nationwide trends regarding industrial development and pollution control. Next, we discuss the regime of environmental enforcement in the township, and the factors leading up to the EPB's decision to close local factories. We also discuss some of the economic and social impacts of factory closures in the township. Next, we examine the growing discourse of sustainable development in China as it is expressed in official government statements, environmental law, and policy. We suggest that, despite the centralized, top-down nature of politics in contemporary China, different levels of government in fact subscribe to different models of sustainability based on divergent goals, including protecting the environment, promoting community development, and preserving income and tax revenue from local industry. We conclude by considering some of the implications of pollution enforcement for the sustainability of current development strategies in rural China.

The Study Site: Rural Industry and Pollution in Sichuan Province

China's reform and opening policies have ushered in a new pattern of land use in rural areas. As new economic opportunities become available in cities and large towns, a marked trend of rural-urban migration is emerging. At the same time, a "townization" process is occurring in which previously rural, agrarian areas are becoming more like small towns in terms of socioeconomic conditions (Guldin 2004). One major driver of these changes in land use is the growth of China's rural industrial sector. Beginning in the 1980s, central planners cre-

ated national policies that encouraged industrialization in the countryside as a way of absorbing surplus labor, providing operating revenues for township and village governments, and increasing household incomes in rural areas. As of 2003, China boasted 21.9 million rural firms employing more than 135.7 million workers and accounting for one-third of the gross domestic product (China Township and Village Enterprise Yearbook Editorial Committee 2004).

This economic dynamism has resulted in some of the most widespread and persistent environmental problems in modern history, of which pollution from rural factories is just one (Day 2005; Economy 2004). China's State Environmental Protection Administration (SEPA), under the direction of the State Council, is responsible for setting pollution standards and enforcing compliance. This agency has expressed increasing concern over the rural industrial sector since the mid-1990s; estimates suggest that rural factories emit up to two-thirds of China's air and water pollution (World Bank 1997). A number of factors contribute to this picture. Rural factories typically burn raw coal, China's cheapest and most abundant energy source. Few factories have the capital to invest in environmental mitigation technologies. Perhaps most significantly, township and village governments have grown dependent on industrial revenue over the past two decades; attempts at enforcing environmental compliance often run counter to the fiscal interests of local cadres (Ren and Li 2002; Meng 1999). Actual pollution monitoring and enforcement activities are carried out by more than 2,500 EPBs within county and municipal governments. These agencies, which represent the extension of SEPA's authority at its most peripheral level, often lack the proper technology and workforce to conduct thorough monitoring of rural industries and to enforce emissions standards.

FIGURE 1: Map of Study Site, Panzhihua Municipality

Futian, the site of this study, is a township of 3,500 people located at the western edge of Panzhihua Municipality in Sichuan Province (see Figure 1). It is within the jurisdiction of Renhe, a third-level (county-level) district under the municipal government. Located on a prominent bend in the Jinsha River, Panzhihua became the site of a major state-owned iron and steel plant as part of the Third Front Movement of the 1960s which moved key industrial facilities to the hinterlands in order to make them less vulnerable to military attack. Since that time, the area has undergone widespread industrialization; many

of Futian's industries were established to provide industrial inputs to the Panzhihua Iron and Steel Company, although their markets have broadened to include large- and medium-scale firms in Sichuan and Yunnan Provinces. Most of Futian's residents, some 53.2%, call themselves Shuitian, a group of people officially classified by the central government as part of the Yi minority nationality (Harrell 2001: 283-291). The remaining local population is primarily Han, although there are small concentrations of Dai, Naxi and other minorities.

Despite the adage common throughout China's arid southwest region that one must "remove a wheelbarrow full of rocks just to grow a mouthful of rice," agricultural yields in Futian are sufficient to feed the local population and to sell excess grain, vegetables and meat as far away as Panzhihua City, although older residents recall that poverty and hunger were widespread less than a generation ago. As a "minority township" (*minzu xiang*), Futian attracted investment from around the region during the 1990s and used industrial revenues to pave roads, build new schools, and fund community development projects.

Futian's industrial complex is located at the northwestern edge of the township, along the main road between Panzhihua city to the east and Huaping, a county town across the Yunnan provincial border, to the west. Within the complex are three factories: a zinc smelter, a coking plant, and a coal washing plant, all of which burn raw coal and lack all but the most basic environmental mitigation technologies. Approximately 100 laborers, most of them young men, work in the factories, and many of them have migrated to Futian with their families from hundreds of kilometers away to take advantage of local labor opportunities. On any given day, plumes of black smoke can be seen rising above the industrial complex. The air smells sulfurous and slightly metallic, and the water in the main stream channel used for irrigation often runs black with effluents from the coal washing plant. Scientific analyses of

ambient air pollution in Futian found that local residents are exposed to levels of particulate matter from factory emissions that far exceed air quality standards set by China's State Environmental Protection Administration, as well as guidelines set by the World Health Organization (Tilt 2004). Futian is thus emblematic of many communities in rural China that seek to promote industrial development and simultaneously must cope with the environmental degradation and threats to human health posed by local industry.

Pollution Enforcement And Its Consequences

China's legal and policy framework for controlling industrial pollution is steadily gaining momentum. The cornerstone of this framework is the Environmental Protection Law, which was implemented on a trial basis in 1979 and formalized by the Standing Committee of the National People's Congress in 1989. Article 18 of the Environmental Protection Law provided for the establishment of a pollution levy system in which EPBs enforce nationally mandated pollution standards and collect fees from industrial firms that fail to meet these standards (Wang, et al. 2002). Several recent legislative decisions deal specifically with the environmental problems of rural industry. In 1996, the State Council issued DECISIONS CONCERNING CERTAIN ENVIRONMENTAL PROTECTION ISSUES, a section of which singled out for closure 15 categories of small-scale rural enterprises that were considered particularly damaging to the environment, including pulp and paper mills, tanneries, metal plating factories, and zinc smelters (State Council 1996). In 1997 the National Environmental Protection Agency (the predecessor of SEPA), in conjunction with the Ministry of Agriculture and several other national agencies, issued REGULATIONS CONCERNING ENVIRONMENTAL PROTECTION AT TOWNSHIP AND VILLAGE ENTERPRISES (Ma and

Ortolano 2000: 30). This set in motion a process of increased oversight and enforcement of the rural industrial sector that resulted in the widespread closure of factories nationwide, including more than 4,000 factories in Sichuan Province (China Environmental Yearbook 2001: 357).

Pollution enforcement in Futian Township has a lengthy and contentious history (Tilt 2007). In 1999 the Renhe District EPB, which has jurisdiction over Futian, conducted routine inspections and air quality monitoring in the township and determined that sulfur dioxide emissions from the local zinc smelter exceeded SEPA standards. Using the pollution levy system as an enforcement tool, the EPB required the owners of the zinc smelter to invest 40,000 yuan in the construction of a new smokestack that would aid in the dispersion of pollutants from coal combustion. (The exchange rate was approximately 1 U.S. dollar to 8.2 yuan.) A group of local farmers, concerned about the effects of water pollution on their crop yields and livestock, began lodging complaints with the EPB in 2000; earlier fieldwork in the township suggests that local residents had petitioned EPB officials as early 1988 (Harrell 2004). The EPB responded to farmers' complaints by fining the local coal-washing plant, which is the primary source of pollutants in the township's surface water. A portion of the fine was used to compensate approximately 100 affected farming households, but each household received only 50 yuan and many considered this merely adding insult to injury.

In late 2002 an exposé program called "Ten Minutes Tonight" (*Jinwan Shifen*) was broadcast on the Sichuan television station, a province-wide media outlet. The program focused exclusively on the local factories of Futian township and the environmental pollution problems associated with them. At the beginning of the program, a reporter with a hidden camera interviewed the main investor in Futian's zinc smelter, a Guizhou native who had relocated to Futian along with his family several years previously. The investor, in front of

the hidden camera, explained how his enterprise, despite its obvious pollution problems, constituted a vital source of tax revenue for the local government and therefore was immune to regulation. The reporter wielding the hidden camera went on to interview several workers from the zinc smelter and showed a cutaway shot of the factory belching black smoke into the sky and stacking blocks of zinc in a small warehouse. The mayor and the Communist Party Secretary also appeared on the program, discussing the state of Futian's industrial development and its impact on the local environment and the health of the township's citizens. By early 2003, officials in the Renhe District EPB, their hands forced by national policy, citizen complaints and public scrutiny, ordered the closure of every factory in Futian for noncompliance with emissions standards.

The story of the zinc smelter and its closure may serve as an illustration of the financial losses that were at stake for local investors and laborers, and for the township government. Its primary investor, a retired secondary school teacher, had relocated along with his family from Guizhou in 1997. He formed a business partnership with his wife and brother-in-law, and the group invested their retirement savings and money from personal bank loans (approximately 450,000 yuan) in the purchase, enlargement and improvement of the smelter, which had been under the collective ownership of the township government since its construction a decade earlier. The smelter consisted of a matrix of six furnaces that collectively produced 30-40 tons of pure zinc per month, which was sold on contract to a company in Kunming, approximately 300 kilometers to the south. Twenty men, most of them from Guizhou province, worked in the smelter, and many brought their wives and children with them. The workers and their families lived in a row of brick houses near the industrial complex on the edge of the township. The prospect of permanently closing the smelter was troubling to the investors, who stood to lose most of their capital investment, and to the workers, who would lose their jobs.

Because the zinc smelter investors were vocal in their opposition to the factory closures, their smelter became the site of some of the bitterest controversy surrounding the factory closures in Futian. Immediately following the Spring Festival in early 2003, the monitoring station chief at the Renhe District EPB agreed to come to Futian to meet with the investors and discuss the fate of their factories. Accompanied by three bureaucrats from the agency, he ascended the scrub-covered hill leading to the factory complex in a Jeep bearing the logo of the district EPB, parking in front of the row of residences adjacent to the factory that housed the workers. Two of the smelter's six furnaces were in operation, both producing steady black puffs of sulfurous smoke. The monitoring station chief had visited Futian several weeks earlier, after the television program broadcast, to inform the township's factory owners of the EPB's demand that local factories close; it was his intention during this visit to ensure that all factories were in compliance. After exchanging pleasantries, the monitoring station chief sat down next to one of the furnaces and began the business of negotiation with the investor and his wife:

Investor: Did you get the report I sent to your office about our business practices and air pollution emissions?

Monitoring Station Chief: I got it. But I've told you before, there's nothing I can do. Your factory doesn't meet emissions standards. The smoke is even worse than it was the last time I came up here. It's terribly dirty.

Investor: There's some smoke, but it's very clean. It's not harmful. Anyway, you have to give us more time. We are retired, and we've invested our savings in this [factory]. You have to just give us three more weeks to finish off the zinc ore we've purchased.

Monitoring Station Chief: I've given you enough time. We agreed last time I came here to monitor that you'd close the factory. It's been several weeks now.

Investor: [getting agitated] But we did close. We've only got two furnaces out of six running now. Look over here, and you tell me: are the other four furnaces hot or cold?

Monitoring Station Chief: Okay, okay. Calm down.

Investor: Feel them. Are they hot or cold?

Monitoring Station Chief: [placing a hand on one furnace] They're cold.

At the end of this exchange, the investor and his wife presented a series of demands to the district EPB. First, they requested to keep the factory open on a provisional basis for three more months in order to repay as much of their loan as possible and to use up the remaining raw coal that had already been purchased to fuel the smelter furnaces. Second, they requested that the Renhe District government formally recognize in writing that the investors had put their personal money, along with loans, into the enterprise and that, as a result, the smelter was to be considered private property. Finally, the investors requested that the district government take steps to mitigate their financial damages. In the end, the investor's pleas for compensation went unheeded by district officials; the zinc smelter, along with Futian's coking plant and coal washing plant, was forced to stop operations completely. Investors recouped only part of their losses by selling off factory equipment and stores of raw coal.

In addition to the obvious financial effects of the factory closures on private investors and laborers, the impact on the township has been enormous. Table 1 shows the worsening fiscal situation of the township government as industrial taxes declined from more than 2 million yuan in the late 1990s to zero following the factory closures. The operating budget for the township, which includes funds for development projects, road construction, school maintenance and other essential tasks, has been cut by two-thirds. Most crucially, the township government is carrying a cumulative debt of 17 million yuan. Much of this debt is attributable to poor returns on investments made in township factories during the period of collective ownership in the 1980s and 1990s. Although all factories had been privatized by 2002, in line with "reform and opening" policies

throughout China, repayment of industrial debt remains the responsibility of the township government. Township cadres are struggling to come up with alternative development strategies. For the time being, the township has returned to a reliance on agricultural production as its primary economic activity. Most factory laborers were part of China's so-called "floating population," a transient workforce that numbers more than 100 million nationwide. Many have chosen to migrate elsewhere in search of factory work, although some have been given local residency status and small land plots by the township government. Half the township's small retail shops have closed since 2003, since industrial workers and their families constituted a large portion of the customer base.

TABLE 1: Selected Fiscal Indicators for Futian Township, 1998-2005 (Unit = Yuan)

Year	Tax Generated By Rural Industry	Total Township Operating Budget	Total Township Debt
1998	2,710,000	1,580,000	15,780,000
1999	2,160,000	2,400,000	15,680,000
2000	N/A	600,000	14,930,000
2001	1,590,000	900,000	17,240,000
2002	1,020,000	200,000	9,490,000
2003	680,000	200,000	10,140,000
2004	0	450,000	14,000,000
2005	0	540,000	17,000,000

Competing Models Of Sustainable Development

Underlying the trend toward increased environmental enforcement of rural factories is a conflict of values regarding the

precise meaning of “sustainable development” in reform-era China. Chairman Mao Zedong once famously declared that “if people living in nature want to be free, they will have to use natural sciences to understand nature, to overcome nature and to change nature; only then will they obtain freedom from nature” (Mao 1966: 44). This statement effectively summarizes much of the ideology regarding the environment during the Maoist period: human beings and nature are fundamentally separate, and the goals of human beings, which supersede the needs of the biophysical environment, must be accomplished through a reliance on science and technology that effectively “conquers” nature. Mao’s rhetoric had already been preceded by more than a decade of policy geared toward radically altering the Chinese environment, a pattern that would continue well into the reform period (Shapiro 2001).

The past decade, however, has seen a dramatic shift on the part of central government authorities with respect to their attitudes toward the environment as the threats to human welfare by industrial development become increasingly obvious and as environmental degradation begins to seriously undermine economic growth. The phrase “sustainable development” (which became an international catchword after the United Nations World Commission on Environment and Development in 1987) has been adopted and circulated within the Chinese government and within Chinese-language scholarship on the environment. In state-sponsored publications, “sustainable development” (most often translated as *kehixu fazhan*) is defined in accordance with the Commission’s (1987: 43) definition as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (*ji manzu dangdai rende xuyao, you bu dui houdai rende nengli goucheng weihaide fazhan*) (China Industrial Development Report 2000: 96-108). China was a high-profile participant in the 1992 United Nations Conference on the Environment and Development in Rio de Janeiro,

Brazil, adopting Agenda 21, a broad policy document outlining environmentally sound development strategies in which the goal of sustainable development was defined as ensuring “socially responsible economic development while protecting the resources base and the environment for future generations” (Beckerman 1998).

The momentum of official Chinese participation in these international agreements has carried over into domestic policy. Former President Jiang Zemin, for example, in a speech before the Fifteenth National Congress in 1997, cited the size of China’s population and the finite capacity of the country’s natural resources as key reasons why the country must put forward what he called a “strategy of sustainability” (*kechixu fazhan zhanliie*) that entails pursuing economic development while allocating more resources, technology and scientific knowledge to environmental protection activities (Wang et al. 2000). Scholarly attention to sustainability has also been forthcoming in the Chinese-language literature on environmental science and policy. Scholars writing in the new journal *Environmental Protection* [*Huanjing Baohu*], a publication sponsored by SEPA, for example, argue that the need for sustainable development is an urgent issue of national security. Under the banner of official government sponsorship, scientists and policymakers are increasingly advocating a position that requires both the government and citizens to recognize that ecological systems must be managed holistically and with the long-term future in mind (Qu 2002). Chinese environmental scientists within SEPA and other agencies are more openly urging a policy shift toward sustainability that would contain five key elements:

1. Working toward intergenerational equity by considering the resource needs of future generations;
2. Using the principles of environmental economics in order to achieve sound resource management;
3. Balancing the needs of humans and nature;
4. Emphasizing environmental education; and

5. Placing the goal of ecological security on equal footing with economic and national security (Guan 2002: 16-18).

The shift toward sustainability within government and scholarly circles in China coincides with a gradual burgeoning of the environmental oversight bureaucracy. During the Ninth National People's Congress in 1998, amidst massive cuts in the national bureaucracy, SEPA not only survived, but was promoted to ministerial status (Jahiel 1998). This originally small, nascent EPB, begun in the late 1970s with a few thousand employees nationwide, has grown into a powerful institution with 380,000 employees and a broad mandate to enforce environmental regulations. Total nationwide expenditures on environmental protection have risen steadily over the past two decades, reaching 1.4% of GDP in 2005 (Zhang 2005). China's fiscal commitment to environmental protection is also evident in the current five-year plan for economic development (2006-2010), which calls for continued investment in environmental protection. Regarding pollution control and treatment, government statistics show a steady increase in nationwide investment for industrial firms of all sizes, from 8.2 billion yuan in 1999 to 16.3 billion yuan in 2003 (Chinese Statistical Bureau 2004).

Of course, policy formulation does not always translate to implementation, particularly in China's rural industrial sector, which poses a special challenge to the environmental protection bureaucracy. The central government is responsible for the creation of environmental policy and the dissemination of environmental protection discourse, but it is the regional- and local-level governments that are left with the job of enforcing compliance. Every county-level jurisdictional unit in China is required to have an EPB. These agencies are typically embedded in county governments which have an overarching mandate to promote economic development. The EPB in Renhe, which ordered the factory closures in Futian, was in fact torn

between its dual responsibilities of promoting industrial development and enforcing emissions standards. In 2002 the Renhe District government produced a series of brochures entitled RENHE DISTRICT INVESTMENT GUIDE (*Renhe Qu Touzi Biaozi*), which were designed to attract outside investors to the area. The brochures cite the rich natural resources in the area, including coal, zinc, titanium, vanadium and iron ores, and outline plans for developing local industry by offering one-year tax holidays and three-year periods of reduced taxes for new investors. Since the 1990s the district government has also overseen the creation of “open districts” (*kaifaqu*), areas specially designated for private investment, within many of its townships, including Futian.

On the other hand, the Renhe District EPB is charged with monitoring air and water pollution emissions and enforcing emissions standards for Futian’s rural enterprises. In the wake of the factory closures, the monitoring station chief at the Renhe District EPB explained that the most pressing problem facing his agency was sustainable development (he used the same term as President Jiang Zemin, *kechixu fazhan*), which he defined as balancing economic development and environmental protection. Reflecting on the role of pollution enforcement in China’s new trajectory toward sustainable development, he added:

It’s particularly difficult in backward places, like Futian, that have poor technology. Places with backward technology, heavy polluters, will be phased out. Once you’ve reached a certain level of development, then you need to start considering environmental protection. This is a war, and I am on the front line.

By contrast, township cadres in Futian were less sanguine about sustainable development. Although all Futian’s factories had been privatized by 2002, eliminating industrial profits as a revenue source, the bulk of the township government’s operating revenue was still derived from industrial sources in the

form of taxes on outputs. The township government's interests thus align closely with those of industrial investors, and the closure of local factories by the district EPB has had disastrous consequences for township finances, as described above.

During the 1990s, Futian relied on industry for nearly 85% of its operating revenues, funneling industrial profits into community development programs. The township government constructed new schools in three of its four villages, paved key sections of the intervillage road, and constructed a new six-story government office building on the edge of the newly created Open District. This so-called "Futian Model" (*Futian Moshi*) was held up as a regional example of using industrial development to raise living standards in peripheral areas with heavy concentrations of ethnic minorities, a perennial problem in rural China (Li 1995). Township cadre reactions to the EPB's decision to shut down Futian's factories were split between the fatalistic and the furious. The cadre in charge of the township's Office of Industrial Development, for example, said that nothing could be done about the factory closures: "The upper level of government has spoken" (*shangji zhengfu yijing shuohaole*). The response from the township Party Secretary was similarly glum: "One thing's for sure: we're going to be a lot poorer" (*women jiu hui qiongle*). The township mayor insisted that the most vexing thing about the factory closures was the insensitivity of the district government to matters of local economic well-being. He suggested that the district government could levy an emissions fine on local factories and help subsidize investment in environmental mitigation technologies, such as coal-scrubbing smokestacks, which would reduce emissions while allowing the factories to remain open. Such an approach is grounded in the laws governing China's pollution levy system (Wang et al. 2002), but EPB officials refused to cooperate.

One government official in the Agricultural Technology Office in Futian contextualized the debate over sustainability and local industrial development by defining sustainability with a

colloquial play on words: “Sustainability is trying to solve the *wenbao* problem without exacerbating the *huanbao* problem.” *Wenbao* (literally, “warm and full”) is how rural Chinese describe the standard of living just above poverty, when one’s belly is sated and there is a roof beneath which to sleep. It is a standard of living that has been attained in Futian only recently; older residents relate tales of eating grass during especially hard times or slaughtering a single pig to provide the annual meat supply for a family of six. *Huanbao* (an abbreviation of *huanjing baohu*, or “environmental protection”), by contrast, is a relatively new concern for Futian and much of rural China, and one that has taken on salience only in the last decade or so since rural enterprises have altered the local landscape and industrial pollution has become an intractable problem. The problem of *wenbao* versus *huanbao* ultimately involves a question of values regarding what should be “sustained.” Should government officials promote industrial development, thereby increasing the living standards for industrial laborers and investors and providing critical revenue for the township government, or should they take meaningful steps toward preventing further degradation of the local environment, which would also help safeguard agricultural livelihoods?

Table 2 provides a characterization of the competing models of sustainable development held by various governmental levels with respect to rural industry and pollution in this case study. In the context of environmental protection and sustainable development, the Chinese government can be viewed as multiple states, each promoting its own model of sustainable development. Environmental politics often involves “struggles at the ideological and discursive levels including, but not restricted to, definitions of science, knowledge, environment, sustainability, and biodiversity” (Derman and Ferguson 2003: 278). These are struggles of meaning that take place in both the economic and ideological dimensions as the central government, district government, and township government debate

about the particular model of sustainability that should prevail with respect to rural industry.

TABLE 2: Characterization of Sustainable Development Models Promoted by Various State Levels.

State Level	Model	Description of Objectives
Central Government (e.g., SEPA)	Idealized Sustainable Development	Primary objective is to promote environmentally sustainable development practices through State Council directives, SEPA policy, and pollution emissions standards
District Government. (e.g., EPB)	Pragmatic Sustainable Development	Primary objective is to implement SEPA policies regarding pollution control, but must also consider the fiscal outlooks of the township and district governments and constraints in funding and expertise
Township Government	Sustained Development	Primary objective is to promote industrial development in order to provide jobs, income and revenue for the township

The central government, via a growing body of environmental law and policy, promotes a model of sustainability that addresses the *huanbao* problem by implementing and enforcing industrial pollution emissions standards. We call this model “idealized sustainable development” because it borrows heavily from current international ideals about sustainability and sets environmental protection policy accordingly, but pays little attention to enforcement or its consequences. The township government, on the other hand, puts forward a literal, albeit resourceful model of sustainable development, conflating the concept with “sustained development,” which it envisions as economic growth in perpetuity, unhindered by the constraints

of environmental regulation. This model of sustainability places emphasis on solving the *wenbao* problem by preserving the income and tax revenue generated by local industry and utilizing the revenue for much-needed community development projects that benefit the township's residents. Township government officials view industry as the most important path to local economic development, although for agricultural households, whose livelihoods are undermined by air and water pollution, industrial emissions are both environmentally and economically damaging (Tilt 2006).

Officials within the district government subscribe to what we call the "pragmatic sustainable development model." They are bound by SEPA policies and directives, but they exercise considerable discretion over how to carry out enforcement activities. Because they are embedded within the district government, which vigorously promotes industrial development, officials in the EPB must weigh the benefits of pollution enforcement against the economic and fiscal needs of the district and township. Given the sheer scale of their enforcement duties, they also face real institutional challenges in the form of workforce, expertise and funding shortages. These competing models mirror the ambiguous nature of sustainable development in the Western scientific literature, where economic growth and environmental protection are often at odds with one another (Osorio et al. 2005; Parris and Kates 2003).

It is worthwhile to ask what the central government stands to gain by espousing a discourse of sustainable development and by enforcing pollution emissions standards, given that this represents a significant shift from the Maoist and early reform periods. First, current estimates suggest that environmental problems cut 3-4% from the nation's annual GDP in the form of clean-up costs, health care costs, and lost wages. Government officials, whose credibility rests in part on maintaining China's high level of economic growth, cannot afford to ignore this problem. Second, by adopting the discourse of sustainabil-

ity, which is presently enjoying wide international circulation, the Chinese government gains a measure of credibility within international political arenas. A substantial amount of foreign aid and investment flows to all levels of government via bilateral aid, green investing, and NGOs because of the central government's effective use of the discourse of sustainability (Vermeer 1998). Finally, the discourse of sustainability, and its extension through the enforcement of emissions standards, provides an avenue for the central government to exercise power over peripheral areas such as Futian at a time in which the state is "retreating" from administrative oversight in other ways. Policies designed to protect the environment can often become a way for central states to gain control over other state- and non-state actors, a process that has been called "coercing conservation" (Peluso 1993). Furthermore, the central government has a stake in quelling the popular uprisings over pollution that are occurring throughout China with greater frequency (Jing 2003).

The closure of rural factories in hinterland areas such as Futian provides a means for the government to enact environmentally sustainable policies while keeping the economic impacts of such policies minimal and localized. The enforcement of emissions standards is a selective process that depends on which firms are capable of defending themselves and garnering the necessary connections and resources to avoid sanction. Despite the fact that emissions from large state-owned enterprises like the nearby Panzhihua Iron and Steel Company surpass Futian's emissions by an order of magnitude, such large-scale firms remain to pollute another day because they are important sources of employment and because they carry symbolic and political import within China's transitional economy. The small-scale factories in Futian bore the uneven consequences of pollution enforcement not because closing them would yield significant cuts in regional emissions but because their closure would result in the least hassle possible while providing con-

crete evidence of the government's commitment to act on its policies of sustainability. Furthermore, officials in mid-level agencies such as the Renhe District EPB lack the institutional power and jurisdiction to tackle state-owned behemoths like Panzhihua Iron and Steel.

Conclusions

In this paper we have used a case study from rural Sichuan to examine the ecological, economic and social consequences of pollution control in China's rural industrial sector, which is a key component of the nation's current development strategy. Officials in the EPB, motivated by a growing national discourse of sustainable development and by citizens' complaints, conducted monitoring and enforcement activities in the township that ultimately resulted in the closure of local factories. The precise meaning of "sustainable development" is a major point of contention as the township faces a loss of tax revenue, income and jobs in the name of environmental protection.

Our analysis has several implications that merit consideration. First, environmental enforcement in rural areas such as Futian underscores the fact that the central government's growing commitment to sustainability, voiced through public discourse, policy and law, is increasingly backed by action. We have suggested that the discourse of sustainable development at the central government level filters down to the lower-level government entities responsible for enforcing compliance with emissions standards. Officials within the district-level EPB see their enforcement duties as an extension of this national discourse. Government statistics and economic plans reveal China's growing financial commitment to enacting environmentally sustainable policies. As the Futian case illustrates, environmental enforcement officials are using increasingly

strict tactics, including the forced closure of industrial factories that were once the mainstay of the rural economy.

Second, the closure of Futian's factories by the district EPB encourages us to move beyond thinking of the Chinese government as a singular entity with clearly definable interests. This event reveals the divergent positions and interests of various state agencies in regard to the question of sustainable development. The dynamic tension between the center and the periphery is a common theme in much of Chinese political history, and the tension has, if anything, evolved and deepened during the reform period (Whiting 2000; Selden 1998; Blecher and Shue 1996). We suggest that, within the realm of environmental politics, even a tightly controlled single-party state like China contains controversial positions within different levels of government with respect to economic development, and that these positions have important consequences for determining how sustainability is defined and implemented.

Finally, our paper suggests that while the roots of intrastate conflict over sustainability are economic in nature, stemming from the continuing problem of heavy reliance on industrial revenue at the township and village levels, the conflict is also ideological and value-laden insofar as it hinges on the question: What should be sustained? The closure of factories in Futian highlighted the contested meanings of sustainable development, with different levels of government advocating wholly different models of sustainability based variously on preserving ecological integrity, promoting community development and retaining important industrial revenue. Because the enforcement of emissions standards occurs at the intersection of the environment and the economy, it is an inherently political issue that entails consequences for ecological integrity and human health, but also for economic growth, employment and community development.

In the domain of environmental politics, where key terms like sustainability become the focus of contestation, the act of

pollution enforcement opens up deep fissures between the township, district and national governments. It also highlights the tension between rural industrial development and the agricultural sector of the economy upon which several hundred million Chinese peasants depend for their livelihoods. The emerging story of privatization in the Chinese countryside has important implications for determining how and to what extent environmental oversight takes place. In the early reform era, when the vast majority of rural factories were owned collectively by township and village governments, criticism of the factory was ultimately criticism of the state, albeit the local state. In this era of privatization, however, rural industry has effectively been decoupled from the state. The financial link between rural firms and local governments, though still important, has become less clear. This ambiguity, combined with the increasing impotence of the local cadre to direct industrial development, makes it possible for more rigorous enforcement of environmental standards to take place. This new regime of enforcement has the potential to dramatically change the social, economic and ecological landscape of rural China.

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