

Institutional Transition in Environmental Protection in China

—from a command-and-control to a rights-based approach

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TABLE OF CONTENTS

Institutional Transition in Environmental Protection in China	1
Abstract.....	2
Setting the context.....	3
Regime values: equality, freedom, and property.....	3
Government authority	5
Environmental protection was a government responsibility in China	6
Market failures	6
Residual control rights: negative externality of pollution and residual property	7
Inadequate private enforcement by the public	7
Government failures.....	9
Commitment to protecting the environment: conflict of interest of local governments	11
Inadequate capacity to enforce environmental laws and standards.....	12
Capture of state: a strong pro-business tendency	13
Empower the public to execute their rights to control pollution.....	13
Environmental information disclosure.....	14
Public participation and consultation	16
Further discussions.....	17
Institutional design for reconciling efficiency and equity goals in development.....	18
Institutional design for reconciling efficiency and equity goals in environmental protection	18

Abstract

From a functionalist point of view instead of an environmentalist, to protect the right to a clean and healthy environment for her citizens is the legal basis and ultimate goal of government intervention in pollution control in China (Title 1, the PRC Environmental Protection Law 1979, amended 1989). The past twenty-seven years have observed the transition from a command-and-control to a rights-based approach to pollution control in China. This paper aims to analyze restrictions and obligations placed on owners/users of the environment, and how the restrictions and obligations have changed over time.

Before, the responsibility to ensure a clean environment solely lies with the Chinese government and tools at its disposal were mainly command-and-control. All facilities are required to meet environmental or technological standards. Flexibility in regulation was only gained through negotiation between the regulator and the regulated, which was rarely transparent. Although the public incur the negative health damages and thus hold residual control rights of negative property of pollution, they generally were not informed of pollution information or granted legal means to seek redresses through private enforcement. As a result, the right to a clean and healthy environment and the right to pollute were distributed in a rather ad hoc manner in the Chinese society.

Having realized both the market and government failures in achieving good environmental results, the Chinese government started to empower the public to exercise their rights to control pollution. Disclosing environmental information is the first step in this direction. Given regional disparities in government capacity, level of maturity of market development, and education attainment and wealth of people, it is an intellectual and practical challenge to design institutions that can achieve effective and equitable environmental protection, and in the meantime, allow flexibility to suit local conditions in China.

Setting the context

The natural environment in which we live is inherited from our ancestors. We do not pay to be able to breathe air. Access to air is collectively owned by citizens (even visitors) of a society. Even if we arbitrarily assign the right to breathe air to certain people but it is almost impossible to enforce by denying rest of the people access to air. If honestly enforced, people would die otherwise. When life and access to air are put on scale, we value the right to life and thus people are granted accesses to air indiscriminately. Accesses to water or soil are somewhat more complicated because they can be restrained without necessarily causing people to lose their lives. Thus, in terms of control rights of air, water, and soil/land, it is a continuum from collectively owned, to own by groups, or individual human being. Although none of air, water or soil from the environment is human product, it is obvious rights to access or control them are a social construction.

A two-way material flow characterizes industrial production and consumption in a modern time: raw materials extracted from the natural environment, air and water are used as inputs and pollutants and wastes are discharged back into the environment. Limited carrying capacity of the environment makes the seemingly abundant air/water scarce resources.¹ This point being realized, individuals and corporations began to compete to gain access to the environment, especially that of a quality suitable for human life or for production.

According to the definition of property rights by Joseph Stiglitz, this paper analyzes restrictions and obligations placed on owners/users (individuals or corporations that have accesses to the environment) of the environment, and how the restrictions and obligations have changed over time.²

Regime values: equality, freedom, and property

The concepts of equality, freedom and property are representative of the regime values central to the U.S. Constitution. They provide the cornerstones of economic prosperity, social justice, and liberty characteristic of U.S. society.³

Amendments I, IV, VI, and XIV of the U.S. Constitution secure the individual freedoms of establishment and exercise of religion, freedom of speech and of the press, the right of peaceable assembly, the right to petition the Government for a redress of grievances, the prohibition of unreasonable searches and seizures, the right to counsel, the right to due process, and equal protection under the law.

By comparison, Chapter II of the Constitution of China defines the fundamental rights

¹ Land is a scarce resource not only because of its limited carrying capacity of pollution but also its limited area and productivity to support human life.

² "Property rights define the terms by which individuals (or corporations) exercise control over the use of an asset and the income derived from an asset. We are using the term in a broad way, to include the restrictions and obligations that are placed on the 'owner,' and the conditions under which control of the asset and the income derived from it are turned over (in part or in their entirety) to others."

³ Rohr, John A. 1989. *Ethics for Bureaucrats*. New York: Marcel Dekker, Inc.

and duties of citizens. Here, I quote the text of Chapter II with regard to equality, freedom, and the property enjoyed by individuals and the state respectively.

“All citizens of the People’s Republic of China are equal before the law” (Article 33).

However, reality dramatically contradicts with the right set forth in Chapter II. In contrast to many western countries, the judicial system in China is not independent but under influence or manipulation by a few privileged people.

“Citizens of the People’s Republic of China enjoy freedom of speech, of the press, of assembly, of association, of procession and of demonstration” (Article 35).

“Citizens of the People’s Republic of China enjoy freedom of religious belief” (Article 36).

“Freedom of the person of citizens of the People’s Republic of China is inviolable.

No citizens may be arrested except with the approval or by decision of a people’s procuratorate or by decision of a people’s court, and arrests must be made by a public security organ.

Unlawful detention or deprivation or restriction of citizens’ freedom of the person by other means is prohibited, and unlawful search of the person of citizens is prohibited” (Article 37).

Furthermore, the Constitution states that “citizens of the People’s Republic of China, in exercising their freedoms and rights, may not infringe upon the interests of the state, of society or of the collective, or upon the lawful freedoms and rights of other citizens”(Article 51).

From the above text, one can infer major differences in the definition of individual rights. For example, the Supreme Court cases of *Gitlow v. New York* and the *Pentagon Paper Case* demonstrate how the U.S. deals with the issue of the freedom of speech or press, constraining the state in terms of “the people’s right to know.” The former case articulates limits to speech in terms of the “clear and present danger” test. The latter case shows that in exercising “prior restraint” the state “carries a heavy burden of showing justification for the enforcement of such a restraint” (p.205).

By comparison, the Chinese Constitution addresses the restriction of individual freedoms in a very different fashion. Individual freedoms “may not infringe upon the interests of the state, of society or of the collective.” A good example of this position is the suppression of practitioners of the Falun Gong religious sect.

Private property is discussed in Article 13 of Chapter I, entitled “General Principles:” “The state protects the right of citizens to own lawfully earned income, savings, houses and other lawful property.” However, private ownership of property is not mentioned in Chapter II, “Fundamental Rights and Duties of Citizens”. This arrangement strongly implies that the ownership of private property is not a fundamental individual right.⁴

⁴ In March 2007, Property Law was enacted by the National People’s Congress of China granting individual rights to protect their private property and seeking compensation from their private property being harmed or taken. So the Constitution of China has to be amended to recognize private property as a fundamental individual right.

Altogether in Chapter I there are six articles addressing property and enterprises owned by the state or collectivities, but only two articles concerning private property. The state or collectives own “natural resources, land, public property” (Articles 9, 10, 12). In contrast, private property is only “a complement to the socialist public economy,” permitted to “exist and develop” by the state, and under the “guidance, supervision and control” of the state (Article 11). Despite the flourishing of private enterprise in China, private property rights will always be subordinate to the economic initiatives of the state.

It is reasonable to conclude that China does not value “equality, freedom, and property” in the same sense as does the U.S. In addition, Chinese do not have a strong sense of state, because the state diminishes “individual” rights by defining them in terms of their impact on the power of the state.

Government authority

Compared to the Constitution of the U.S., the differentiation between “the people” and “state” is rather ambiguous. “The people administer state affairs and manage economic, cultural and social affairs through various channels and in various ways in accordance with the law” (Chapter I, Article 2). Unlike the U.S., there is a perpetual tension between the state and civil society. According to the Chinese Constitution, the state is insinuated into civil society; the “people” take an active part in administering state affairs. In this respect, it is meaningless to discuss individual rights, because the interests of citizens are implicitly conflated with those of the state.

Significantly, the paternalism characteristic of Chinese governance is firmly rooted in the nation’s history. During the feudal era, illiteracy was widespread. Consequently, governance became the responsibility of an educated elite. In fact, public officials were referred to as “parent-like officials.” Their motto was: “If I, as a government official, cannot fairly execute my duties, I would rather resign and grow sweet potatoes back home.” However, since the establishment of the People’s Republic of China in 1949, public education has become relatively widespread. As a result, contemporary Chinese have the capacity to make decisions traditionally relegated to mandarins. Nevertheless, traditional regime values continue to haunt Chinese political institutions.

Unfortunately, paternal authority has a tremendous capacity for self-legitimation. Even as the government facilitates private endeavors, it becomes a permanent feature of social institutions, insinuating itself into nearly every aspect of social and political life. As a result, the oppressive conditions of the past are perpetuated.

The executive branch of government is called the State Council. The Council enjoys a tremendous degree of administrative discretion. Item 3 of Article 89 defines the powers of the State Council to “formulate the tasks and responsibilities of” and “exercise unified leadership over” national “ministries and commissions.” In addition, Item 4 of Article 89 grants the Council the power to “formulate the detailed division of functions and powers between the Central Government and the organs of state administration of provinces, autonomous regions, and municipalities directly under the Central Government,” and to “exercise unified leadership over the work of local organs of state administration at various levels throughout the country.” In this sense the State Council is an autonomous body with the capacity to determine the structure and character of the legislative branch

--- the National People's Congress.

According to the Constitution, the National People's Congress has three powers with regard to the State Council. Item 5 of Article 62 grants the Congress the power "to decide on the choice of the Premier of the State Council upon nomination by the President of the People's Republic of China, and on the choice of the Vice Premiers, State Councilors, Ministers in charge of ministries or commissions, the Auditor General and the Secretary General of the State Council upon nomination by the Premier." Item 9 of Article 62 grants the power "to examine and approve the plan for national economic and social development and to report on its implementation." Item 10 of Article 62 gives the Congress the power "to examine and approve the state budget and to report on its implementation." However, according to the Constitution, Auditors are part of the State Council, subject to the direction of the Premier. As a result, the Congress does not have the power to oversee the implementation of its constitutional mandate.

Environmental protection was a government responsibility in China

China faces severe environmental challenges. However, China did not start building its environmental governance apparatus until the middle of the 1970s after the 1972 U.N. Conference on Human Environment held in Stockholm, Sweden. In 30 years, China has developed comprehensive environmental standards and regulations that cover both natural resources conservation and pollution prevention and control under the China Environmental Protection Law.⁵

The general principle and ultimate purpose of the Environmental Protection Law 1989 is stated as following: "This law is enacted to protect and improve the living environment and ecological environment, to prevent and control pollution and other harm to the public, to protect public health, to facilitate and ensure the modernization of socialist China" (Article I, Chapter I).⁶ Article 6 of Chapter I prescribes the responsibility of every work unit (including corporations) and individual to protect the environment and their right to report to the government or sue polluters in the court.⁷ The State Environmental Protection Administration under the State Council and local governments above a county level are responsible for environmental protection in the country and in their jurisdictions respectively (Article 7, Chapter 1).⁸ The Chinese Constitution also has prescribed a positive role for the state in environmental protection.

Market failures

At the time when the Environmental Protection Law was first promoted in China in 1979, there was no such a term of market economy. Although by economists' standard it is legitimate for government to intervene to control pollution, the reasoning behind the state intervention in the

⁵ The People's Republic of China (PRC) Environmental Protection Law was first enacted in 1979 for trial implementation, and was amended in 1989.

⁶ 为保护和改善生活环境与生态环境,防治污染和其他公害,保障人体健康,促进社会主义现代化建设的发展,制定本法。

⁷ 一切单位和个人都有保护环境的义务,并有权对污染和破坏环境的单位和个人进行检举和控告。

⁸ 国务院环境保护行政主管部门,对全国环境保护工作实施统一监督管理。县级以上地方人民政府环境保护行政主管部门,对本辖区的环境保护工作实施统一监督管理。

Chinese legal institutions was not for dealing with market failures per se.⁹

There are three scenarios that we can consider. Since air etc. is de facto collectively owned, by natural law, people who do not agree on pollution can fight with the other side. Physical power determines outcomes but the stronger who could win does not necessarily represent the public interest and thus probably not socially optimal. If right to pollute or right to a clean environment free from pollution is clearly and completely assigned in society, and if free of transaction costs, Coase would argue polluters and pollution victims can trade on their own and socially desirable outcomes can be achieved. Unfortunately, environmental harms are not always immediately visible when pollution behaviors are committed. To what extent of certainty and magnitude pollution will cause environmental and health damages, is a scientific and social question. Information and knowledge on this question is a public good and tend to be under supplied by individuals because the benefit from pollution prevention and control is dispersed but the cost of searching for answers is concentrated. The same argument holds true for individuals taking actions to fight against polluters. Thus government needs to intervene to deal with market failures from incomplete information and collective action problems, and to harness the benefits of improved public health derived from a clean environment.

Residual control rights: negative externality of pollution and residual property

Environmental regulations and standards are contracts between the public (through the legislative and/or executive branches) and corporations whose behaviors might have an environmental impact. Penalties are exerted on firms if they do not live up to contracted conditions. Given incomplete contracts and uncertain health and/or ecological impacts of pollution, it is the general public who incurs the damage on their health as residual negative property derived from pollution (costs can be partially covered by polluters in forms of pollution discharge fees, fines, factory closure, etc.). According to neo-institutionalism theories, the party which owns the residual control rights should have the control on information and decision-making related to the property.¹⁰ Thus, the public should be provided with pollution information and make enforcement decisions as they see appropriate.

Inadequate private enforcement by the public

As the venue for private enforcement is mainly public complaints, citizen lawsuits, consumer purchasing power, and/or the capital markets, China has not yet developed the necessary institutional infrastructure.

Public-interest groups or public-interest lawsuits are not encouraged in China. A

⁹ See Joseph Stiglitz's Introductory Essay written for the Task Force on Institutional Design for China's Evolving Market Economy. Here I simply admit the Coase Theorem does not hold true for pollution issues. Property rights cannot be clearly and completely delineated, nor can collective action problems be solved in pollution control.

¹⁰ Williamson, Oliver E. (1975). *Markets and hierarchies, analysis and antitrust implications : a study in the economics of internal organization*. New York, Free Press; Barzel, Yoram. (1989). *Economic analysis of property rights*. Cambridge ; New York, Cambridge University Press; Williamson, Oliver E. (1996). *The mechanisms of governance*. New York, Oxford University Press.

public-interest organization is required to have a sponsor that is either a public organization or a government agency. The requirement has curbed the growth of the NGO sector in China. Public-interest lawsuits are sometimes impractical because, for example, in the case of the Songhua River incident, it was found that China's Civil Code does not allow individuals legal standing to bring lawsuits on behalf of natural features such as a river.

Similar to other developing countries, China does not have a well-developed NGO sector or mechanisms for attorney fee recovery. It is difficult for the public to take legal actions against pollution. It is rather exceptional that the Center for Legal Assistance to Pollution Victims (CLAPV) of China University of Politics & Law has been helping pollution victims bring lawsuits to courts since it was established in 1998. The CLAPV has to attract funding from overseas to be able to sustain itself because it provides legal services to pollution victims free of charge.¹¹

Since there are currently less than 2000 publicly traded companies in the whole country, investors can only exert pressure on a very limited amount of firms. Although customer pressure might compel producers to take into consideration the life-cycle environmental impact of their products, customers in China are not sophisticated enough or willing to favor "green" products or producers.¹² By this standard, the majority of polluters in China are left unattended by the public.

Furthermore, inconsistency between public environmental awareness, interest, knowledge, attitude, legitimization, and practice has impeded private environmental monitoring and enforcement in China. For example, interest in the environment generally failed to prevail in the balancing test of economic development vs. environmental protection. Half of the public did not agree to slow down economic development for environmental protection. If a highly polluting plant is highly profitable, half of the government officials and 60% of entrepreneurs did not want to close it. The public, especially the rural population, had very limited knowledge about the environment.

The public listed four major reasons that account for local environmental degradation: (1) a lack of public environmental awareness; (2) a lack of government attention regarding environmental protection; (3) a lack of a law-abiding spirit among the public; and (4) the problem of industry valuing its profits more than pollution prevention and control. However, individuals, the tertiary industry, and agriculture were not thought to be responsible for environmental problems. Not surprisingly, almost 80% of the public thought the central and local governments and industry should bear the bulk of the responsibilities involved in protecting the environment. And almost 30% of the public thought individuals should not be held responsible for protecting the environment. Obviously, the public attitude towards environmental protection is somewhat mixed. People thought individuals,

¹¹ Interview with the director of the CLAPV, Canfa Wang.

¹² Seventy-five percent of the public won't consider environmental factors when making purchasing decisions. About 65 percent of the public was not willing to pay more for environmentally friendly products. Personal conversation with Lois Schiffer, the Assistant Attorney General of the Justice Department's Environment and Natural Resources Division. She does not think consumer markets can reward and/or punish firms based on their environmental performance. Her point is echoed by Eisner, Marc Allen. (2004). "Corporate Environmentalism, Regulatory Reform, and Industry Self-Regulation: Toward Genuine Regulatory Reinvention in the United States." *Governance* 17(2): 145-167. "Research by Roper Starch Worldwide (see Speer 1997) reveals that the average eco-premium is approximately 4.5 percent in the US. Environmental impact is the primary decision criteria for 6 percent of the population — well behind experience (47%), price (37%), brand recognition (15%), personal recommendation (13%), and convenience (12%)."

their level of environmental awareness, and their law-abiding spirit all make a difference. However, the public relies on the government and industry to take responsibility for and the initiative to strive for a better environment.

When an environmental conflict arises or a violation is found by the public, over half of the social elites (government officials and entrepreneurs) would support the public in complaining to relevant government agencies. And about 80% of the public would prefer to do so. About 60% of the public would be willing to take legal actions.

As to taking actions against pollution, three quarters of the public would not consider the environmental friendliness of a product when making purchasing decisions. About 65% of the public was not willing to pay more for environmentally friendly products. And the public expected the government to carry out more public environmental education programs, enact more environmental regulations, enforce environmental regulations more stringently, and invest more in environmental protection.

Clearly, public environmental awareness is on the rise and the public trust in and reliance on the capacity of the government to solve environmental problems still dominate the Chinese society.

Government failures

The architecture of environmental governance in China is of a grid structure. In terms of environmental lawmaking and policymaking at the central level of government, both the legislative branch—the National People’s Congress (NPC)—and the administrative branch—the State Council and functional ministries below it—may promulgate laws, regulations, and administrative directives. At the local level, the People’s Congress and local governments (from the provincial to county level) may pass regulations and issue administrative directives as long as they are in line with national regulations (see Figure 1).

To turn regulatory mandates on pollution prevention and control into environmental results, China has employed a web of environmental policy instruments, including traditional command-and-control, incentive-based, and voluntary approaches (see Table 1). Environmental protection bureaus (EPBs) (*difang huanbaoju*), which exist at various levels of government, are the major parties responsible for implementing these policies. Local EPBs depend on local governments for funding and personnel resources, but they receive policy mandates from the State Environmental Protection Administration (SEPA) and higher level EPBs (see Figure 1). As domestic and international observers have correctly pointed out, the subnational structure of implementing environmental policies, dual leadership over local EPBs, and their weak institutional capacity have limited the real impact of environmental regulations and policies.

Figure 1. Structure of Government Administration in China

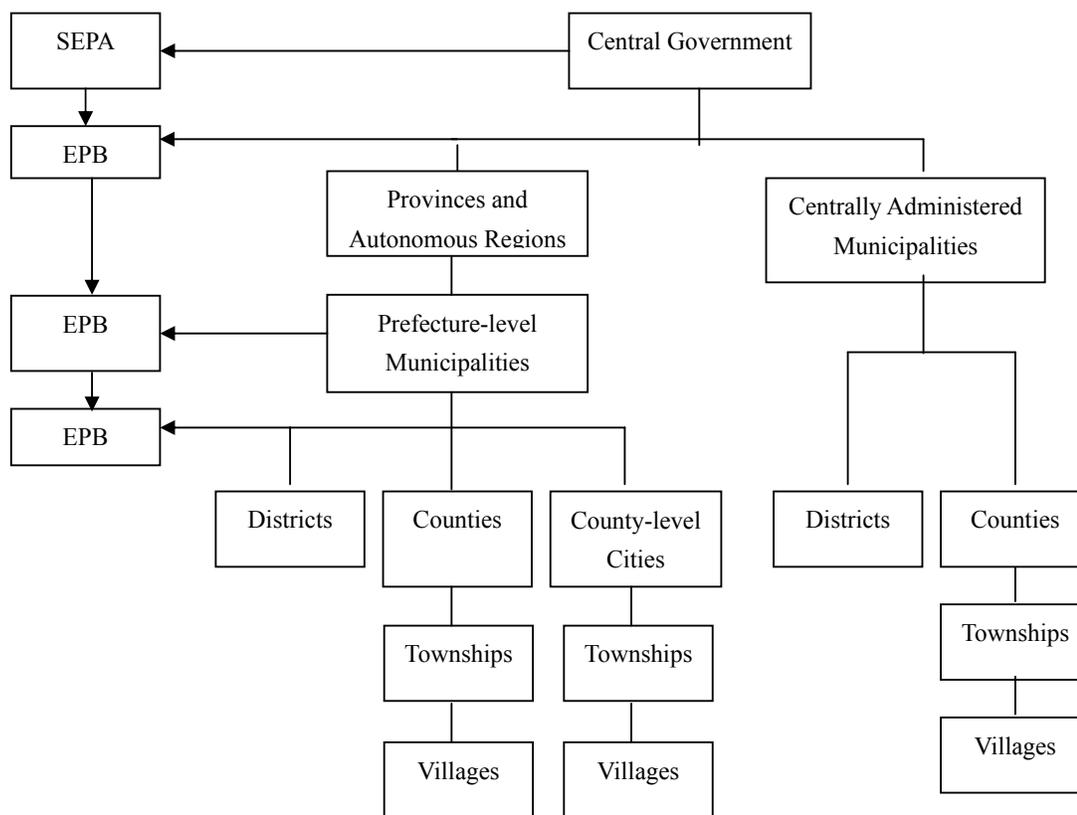


Table 1. Environmental protection policy instruments in China

Category	Environmental protection policy instruments		
Preventive	Three synchronization; Environmental Impact Assessment; Cleaner production; Circular economy.		
Direct regulation (administrative)	I	Limited time treatment; Discharge permit.	
Direct regulation (economic)	II	Pollution levy/Pollution discharge fee.	
Incentive mechanism (economic)	I	Tradable emissions permit.	
Incentive mechanism (information)	II	Color rating & disclosing of environmental performance of firms; Disclosing important pollution sources.	
Incentive mechanisms	III	Comprehensive evaluation of city environmental protection;	

(political)	Environmental responsibility system; Environmental protection model city; National model eco-park; Environmental protection model township/village; Eco-village.
Voluntary approaches	Nationally environmental friendly enterprises; ISO14000.

Commitment to protecting the environment: conflict of interest of local governments

Environmental protection and economic development were in competition for the attention of the leadership of local governments. EPBs, though nominally affiliated with SEPA, are first and foremost subordinate to local governments. But because local government officials typically place stimulating growth before regulating industry, they will intervene in the work of their EPBs when there is a conflict of interest and the will of the local governments generally prevails.

Besides the above challenge, local EPBs rely on collecting pollution discharge fee from industrial facilities to fund their day-to-day operation. This creates a displacement of goals: if environmental targets are achieved and industry stays in compliance, local EPBs lose their revenue sources.

In short, economic development and revenue generation have been placed an undue emphasis by local governments in China. In stead, it has not been attended to adequately to provide public services and public goods including environmental protection to serve the people especially the disadvantaged.

It seems reasonable to expect localities with better socio-economic conditions to be more committed to protecting the environment than regions economically lagged behind.¹³ However, this line of reasoning is not able to explain the dramatic increase in the investment in environmental monitoring after 2002 in Zhenjiang, where socioeconomic conditions have not changed dramatically since 2002.

Up until 2002, the annual budget of the Zhenjiang monitoring station had been maintained at a level of 4 million yuan. In 2002, the Zhenjiang city government decided to compete for the national “model city for protecting the environment” award.¹⁴ In 2003, the budget of the Zhenjiang

¹³ Environmental economists argue pollution discharge increases when per capita income increases but begins to fall after per capita income reaches a certain level, proximately \$8,000. This observation is generally called environmental Kuznets curve. Although no consensus has been arrived on where the turning point would be exactly, economists agree rich people have different preferences and affordability for the environment than the poor. Governments in regions with different socio-economic conditions, likewise, have different preferences and affordability for, and levels of commitment to environmental protection.

¹⁴ SEPA initiated a “national environmental protection model city” program in 1997. Since then, there has altogether 48 cities/districts been named as model cities/districts. More information is available at the following link: <http://www.sepa.gov.cn/eic/650501865317859328/index.shtml>.

monitoring station was increased to 4.8 million yuan, then further increased to 7 million in 2004 (4 million set aside for purchasing monitoring equipment) and 9 million in 2005 (5 million set aside for special monitoring tasks).¹⁵ In 2004, SEPA named Zhenjiang the national “model city for protecting the environment.”

The Zhenjiang example illustrates how a local government could be motivated to make a credible commitment to protecting the environment. The administrative resources of the Zhenjiang city government are abundant. After the leadership determined that it wanted to be named a national model city, more resources were allocated to the Zhenjiang EPB for the environmental monitoring work. It has to be left for empirical studies to find out a threshold level of economic development beyond which a local government is willing to and able to invest more in environmental protection. However, it is fair not to expect all regions in China to increase investment in the environment in such dramatic terms as what happened in Zhenjiang.

Thus a well-designed evaluation and reward system for government officials stimulates a stronger commitment to the environment.

Inadequate capacity to enforce environmental laws and standards

Assuming the good will of local EPB officials, administrative discretion can be good and necessary if they have the capacity to accurately target “bad guys” especially since local EPBs only have limited regulatory resources. Otherwise, wide administrative discretion introduces capricious government actions, favoritism to special interests, and corruption.¹⁶ In practice, it is widely acknowledged that administrative capacity of local EPBs is insufficient.¹⁷ Lacking necessary financial and human resources and a resulted displace of goals comprise the major causes. For example, continuous monitors are very important for compliance assurance by constantly putting industry on defense. However, because of a lack of funding, even in regions such as Jiangsu Province where local economy is well developed, not every EPB is equipped with continuous monitors.

Besides insufficient technology and equipment, the quality and quantity of the human capital owned by local EPBs pose another constraint on accurate monitoring and aggressive enforcement. Provincial average percentages of professional employees of local EPBs are generally low across China in 2002, ranging from the lowest 16.3% in Tibet to the highest 74.7% in Beijing with a national mean of 53.3%. An average local EPB in China employed 13.3 staff members in 2002, with the least of 6.4 in Qinghai and the most of 24.1 in Henan.¹⁸

¹⁵ Interview 06072005-07.

¹⁶ Davis, Kenneth Culp. 1969. *Discretionary justice; a preliminary inquiry*. Baton Rouge,; Louisiana State University Press, Handler, Joel F. 1986. *The conditions of discretion : autonomy, community, bureaucracy*. New York: Russell Sage Foundation, Lowi, Theodore J. 1969. *The end of liberalism; ideology, policy, and the crisis of public authority*. New York,; Norton, Rohr, John A. 1989. *Ethics for bureaucrats: an essay on law and values*. New York: M. Dekker.

¹⁷ Interview 06072005-07. Field study by author conducted in August 2005 in Jiangsu Province, China. For example, even in a prefecture level city in Jiangsu Province, one of the most economically advanced regions in China, not until 2004 its EPB had been equipped with mobile monitoring trucks. There were no continuous monitors installed in enterprises which are connected to monitoring stations then.

¹⁸ Author calculation based on China Environmental Yearbook 2003.

Even the staff size is already small, local governments only cover a fraction of the staff salary and operational costs of their EPBs. Local EPBs and their monitoring stations have to earn revenue to supplement their income by conducting contracted work from industry. However, the conflict of interest puts professional impartiality at stake and consequently the accuracy of environmental information is sacrificed.¹⁹

Overall, the capacity of local EPBs to pick up signals is lacking because of a shortage of administrative stock (financial and human capital, technology and equipment) and sometimes conflict of interest. To cope, local EPBs have adopted a targeted enforcement strategy following up on citizen complaints. Unfortunately, the enforcement is sometimes biased because citizens usually do not have the technical knowledge to assess environmental harm and risks and regulatory resources tend to be allocated more to issues which are more visible.²⁰

As a result of both market and government failures, the public opinion poll has listed environmental issues to be the second most likely cause for social unrest in 2005.

Capture of state: a strong pro-business tendency

Local governments generally show special leniency toward big contributors to the local tax revenue, or even to big employers or enterprises experiencing financial hardship, within their jurisdiction. Local governments sometimes will reduce or waive water pollution discharge fees based on economic considerations.²¹ Others have reported that local governments will sometimes help enterprises within their jurisdiction circumvent environmental regulations.²² Even worse, local governments may conceal information on poor environmental performance. For example, in Hohhot of Inner Mongolia and Tongling of Anhui Province, city governments would not let their EPBs disclose the color rating results of environmental performance of some big enterprises in their core industries. Among other reasons, the resistance from Hohhot's economic commission, industrial bureau, and city government resulted in the failure of its pilot environmental information disclosure program in 1999.²³

Empower the public to execute their rights to control pollution

The public entrust government to enter contracts with industry exemplified by environmental regulations or standards when industry does not voluntarily take into consideration

¹⁹ Interview 06072005-07; 07182005-01.

²⁰ Wang, Hua, Nlandu Maningi, Benoit LaPlante, and Susmita Dasgupta. 2003. "Incomplete Enforcement of Pollution Regulation: Bargaining Power of Chinese Factories." *Environmental and Resource Economics* 24: 245-262, Wang, Hua and David Wheeler. 2000. "Endogenous Enforcement and Effectiveness of China's Pollution Levy System." The World Bank, Washington, D.C.

²¹ Interview 06072005-06; 06082005-04; 06092005-01; 07152005-01; 07172005-01. Jahiel, A. R. (1997). "The Contradictory Impact of Reform on Environmental Protection in China." *The China Quarterly* 149: 81-103.

²² Economy, E. (1997). *Environmental Scarcities, State Capacity, Civil Violence: The Case of China*. Washington, D.C., American Academy of Arts and Sciences; Chen, S. and J. I. Uitto (2002). "Governing Marine and Coastal Environment in China: Building Local Government Capacity Through International Cooperation." *China Environment Series* 6: 67-80.

²³ Interview 06022005-01; 06022005-02; 07152005-01; 07152005-02; 07172005-01; 07182005-02.

negative environmental or health impacts of their operations. Having stated either market or government cannot strike a good balance between profit/revenue seeking and protecting the environment and public health, China has seen a transition from a government dominant command-and-control to a rights-based approach to pollution control. The Chinese government started to recognize individual rights to a clean environment no matter is it a direct confrontation with polluting firms or a public protest to urge the government to take action against pollution. Steps that are taken to empower the public to exercise their individual rights include provision of public access to environmental information and public participation in development decision-making.

Environmental information disclosure

Environmental information disclosure brings the public into the government-industry enforcement dyad. From a pragmatic point of view, it can compensate for insufficient government resources in environmental monitoring and enforcement and opens up the possibility for private enforcement. From a legalistic point of view, the fundamental individual right to a clean and healthy environment can never be realized without adequate access to environmental information.

Public disclosure of firms' environmental performance information has been characterized as the "third wave" of environmental regulation, after direct regulation and economic incentive mechanisms.²⁴ This informal environmental regulation, as opposed to formal environmental regulation and the market approach of "pay as you pollute," has been supported by the empirical evidences of reduced emissions in North America, Southeast Asia, and China.²⁵

A global trend has emerged to provide the public with open access to environmental information and further involve them in environmental decision-making.

²⁴ Tietenberg, Thomas. (1998). "Disclosure Strategies for Pollution Control." *Environmental and Resource Economics*(11): 587-602.

²⁵ Magat, Wesley A. ; & Viscusi, W. Kip. (1992). *Informational approaches to regulation*. Cambridge, Mass., MIT Press; LaPlante, Benoit ; & Lanoie, P. (1994). "Market Response to Environmental Incidents in Canada." *Southern Economic Journal* **60**: 657-72; Hamilton, James T. (1995). "Pollution as News: Media and Stock market Reactions to the Toxics Release Data." *Journal of Environmental Economics and Management* **28**(1): 98-113; Konar, Shameek ; & Cohen, Mark A. (1997). "Information as Regulation: The Effect of Community Right to Know Laws on Toxic Emissions." *Journal of Environmental Economics and Management* **32**(1): 109-124; Dasgupta, Susmita; Laplante, Benoit ; & Mamingi, Nlandu. (1998). Capital Market Responses to Environmental Performance in Developing Countries. *Policy Research Working Paper 1909*. Washington D.C., The World Bank; Khanna, Madhu; Quimio, Wilma Rose H. ; & Bojilova, Dora. (1998). "Toxics Release Information: A Policy Tool for Environmental Protection." *Journal of Environmental Economics and Management* **36**: 243-266; Tietenberg, Thomas H. ; & Wheeler, David (1998). *Empowering the Community: Information Strategies for Pollution Control*. Frontiers of Environmental Economics Conference, Airlie House, Virginia; Khanna, Madhu ; & Damon, Lisa A. (1999). "EPA's Voluntary 33/50 Program: Impact on Toxic Releases and Economic performance of Firms." *Journal of Environmental Economics and Management* **37**: 1-25; Wheeler, David. (2000). *Greening Industry: New Roles for Communities, Markets, and Governments*. Washington, D.C., The World Bank; Konar, Shameek ; & Cohen, Mark A. (2001). "Does the Market Value Environmental Performance?" *Review of Economics and Statistics* **83**(2): 281-; Dasgupta, Susmita; Hong, Jong Ho; Laplante, Benoit ; & Mamingi, Nlandu. (2004). Disclosure of Environmental Violations and the Stock Market in the Republic of Korea. *Policy Research Working Paper 3344*. Washington D.C., The World Bank; Wang, Hua; Bi, Jun; Wheeler, David; Wang, Jinnan; Cao, Dong; Lu, Genfa ; & Wang, Yuan. (2004). "Environmental Performance Rating and Disclosure: China's GreenWatch Program." *Journal of Environmental Management* **71**: 123-133.

- ✚ Responding to devastating environmental accidents, the US passed the Emergency Response and Community Right to Know Act of 1986 followed by the implementation of the Toxic Release Inventory (TRI) in 1989.²⁶
- ✚ The Council Directive 90/313/EEC on the freedom of access to information on the environment first formally requested the European Community member governments to provide the public with adequate access to environmental information.²⁷
- ✚ The principle 10 of the Rio Declaration on Environment and Development in 1992 by the General Assembly of the United Nations prescribed the right of the public to have appropriate access to environmental information held by public authorities and to participate in decisionmaking on environmental matters.²⁸
- ✚ The Aarhus Convention (1998) goes one step further to require the European Union member countries which ratified the convention to provide public access to environmental information, which is legally binding and the public can sue their governments if they find violations.²⁹

Justified on both an empirical and theoretical ground, Graham summarized succinctly in her 2002 book *Democracy by Disclosure* why and how an informational approach of environmental regulation is effective and different from direct regulation or financial incentive mechanisms.³⁰

Disclosure strategies differ from traditional government standards and financial incentives in at least three fundamental ways. First, they *aim to establish levels of acceptable risk by means of public pressure rather than deliberation*. Government standards specify acceptable design or performance by legislative and regulatory processes. Economic incentives specify a legislated price or quantity of acceptable risk. Disclosure, however, influences risk through the countless actions of consumers, suppliers, employees, investors, community residents, and voters that alter organizations' decisions. Only the scope and character of information about pollution or errors are set legislatively. Gaining prominence during the 1990s, when public distrust of political processes was high, these systems, like the financial disclosure mechanism adopted in the 1930s, reflected a desire to skirt legislative processes to empower ordinary citizens.

Second, they *employ communication as a regulatory mechanism*. Government standards rely on

²⁶ Toxics Release Inventory (TRI) was first officially established in 1988 requiring all manufacturing facilities operating under SIC codes 20-39, with 10 or more employees, to submit a report of their annual on-site releases and off-site transfers of each of over 300 specified toxic chemicals to the US EPA. After random check of data accuracy, US EPA made this information available to the general public. It was reported that between 1989 and 1996, the overall reportable emissions of toxic substances have reduced by 46%.

²⁷ For more information on 90/313/EEC, check the link below:

http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=31990L0313&model=guichett

²⁸ For more information on Rio Declaration on Environment and Development, check the link below:

<http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163>

²⁹ For more information on the Aarhus Convention, check the link below:

<http://www.unece.org/env/pp/documents/cep43e.pdf>

³⁰ Graham, Mary. (2002). *Democracy by disclosure : the rise of technopopulism*. Washington, D.C., Governance Institute/Brookings Institution Press. P.10-11.

rules and the threat of sanctions to encourage organizations to reduce risks. Taxes, subsidies, and other economic incentives rely on the prospect of financial loss or gain. Information strategies, by contrast, depend on improving understanding in ways that lead to changed purchasing, investing, or employment, or collective action. Placing new data in the public domain is itself intended to produce changes in markets or politics in ways that ultimately reduce risks.

Finally, most of these systems *extend the reach of government*. They generally seek to influence activities beyond those that are the targets of government rules, taxes, and subsidies and they create the potential for impacts that are not circumscribed by state or national boundaries. Information required in one jurisdiction becomes available everywhere, unimpeded by political or geographical barriers.

In conclusion, an informational approach of environmental regulation promotes democratic values in society. It gives the public access to environmental information which will enable them to participate in environmental decision making in a meaningful way. So to disclose environmental information helps promote transparency, inclusiveness, and democracy.³¹ From an economic perspective, information-based approaches affect the expected penalty for noncompliance through empowering different actors (regulators, the public, or the regulated themselves) to engage in monitoring and enforcement actions. Thus the probability of a violation being caught and the consequences of a violation are modified accordingly. Mary Graham looks deeper into it and proposed that an informational approach of regulation works through relational and communicative mechanisms. Better environmental compliance can be achieved among stakeholders through interactions that are by nature evolving and flexible.

Efforts underway by the Chinese government to grant public access to environmental information include (1) the Cleaner Production Promotion Act 2003, requiring local governments to publicize important pollution sources within their jurisdictions; and (2) SEPA ordinance on environmental information disclosure issued in April 2007. This ordinance requires both government and industry to make publicly accessible environmental information, including information on environmental regulations and standards, environmental planning, environmental quality, environmental accidents and preventive measures, project documents on environmental impact assessment, pollution discharge, public complaints and government responses, resource/energy usage and pollution discharge of industrial facilities, industrial voluntary agreements with government agencies, and equipment for pollution treatment and its status of operation.³²

Public participation and consultation

The Environmental Impact Assessment Law (2003) requires project developers/owners themselves or they can hire third parties to disseminate environmental impact information to nearby neighborhoods that might be affected and solicit their written comments or hold public hearings. The

³¹ Esty, Daniel C. (1999). Toward optimal environmental governance., *New York University Law Review*. **74**: 1495-1574; Graham, Mary. (2002). *Democracy by disclosure : the rise of technopopulism*. Washington, D.C., Governance Institute/Brookings Institution Press; Beierle, Thomas C. (2003). "Environmental Information Disclosure: Three Cases of Policy and Politics." *RFF Discussion Paper*(03-16); Beierle, Thomas C. (2003). "The Benefits and Costs of Environmental Information Disclosure: What Do We Know About Right-to-Know?" *RFF Discussion Paper*(03-05).

³² 国家环境保护总局令第 35 号.

third parties are not paid unless the environmental impact assessment reports are approved by environmental protection agencies. As a result, the supposedly independent experts who are capable of conducting environmental impact assessment do not hold neutral positions any more. It is in their own self interest to push environmental impact assessment reports through government scrutiny. Without genuinely valuing public concerns or ex post accountability mechanisms that hold professionals who have cheated in the reports responsible for adverse environmental impacts, the public interest is not adequately protected. Even if an ex post accountability mechanism is in place, it is difficult to determine if an ill professional judgment is because of bad intention or pure incompetence.

Further discussions

Genuinely recognizing and returning back to the public individual rights to a clean and healthy environment, the Chinese government submits itself to the oversight by the public and may decrease its appetite for revenue generation and become better detached from business interest. This is to say, government is no longer the single decision maker in the pollution and enforcement game, deciding who can pollute, how much pollutants one can discharge, and how much compensation one has to pay for the environmentally bad created. In stead, the public now has say in environmental and related development decision-making.

In history, there have been efforts to color rate environmental performance of industrial corporations and make the rating results publicly available. But very little results have been achieved on the ground.³³ It is worth mentioning for an informational approach of environmental regulation to work, the following conditions are necessary: (1) the regulator has to set up the infrastructure for collecting, processing and disclosing environmental information; (2) citizens are explicitly granted the right to bring citizen law suits and complaints to redress environmental conflicts and harm; and (3) products and enterprises can be differentiated by their environmental friendliness in the consumer and capital markets.

In recent period, public protests have been reported in the news to stop polluting chemical plants or garbage disposal plants being built in their neighborhoods, even though the government has approved the projects.³⁴ Especially, in contemporary China, people now own their homes and they care about the value of the land and real estate establishments. They have a genuine interest in the natural environment in which they live, beyond environmental and health effects. This “not-in-my-backyard” argument may be seen more and more often in the years to come.

As people in eastern regions prefer and can afford a cleaner environment, they have started to drive highly polluting industries out to middle and western regions in China. The Chinese government tends to rely more on private enforcement by individual citizens. Environmental equity becomes a concern for society.

It is widely recognized capacity of local governments, level of maturity of markets, and education attainment and wealth of the public vary across different regions in China. It is an

³³ See Li, Wanxin unpublished manuscript *Informational Environmental Regulation in Practice*.

³⁴ In recent one year, there has been a lot of news reports on public protests against polluting facilities being located in their neighborhoods.

intellectual and practical challenge to design institutions that can achieve both effective and equitable environmental protection, and in the meantime, allow flexibility to suit local conditions in China.

Institutional design for reconciling efficiency and equity goals in development

Institutional design for reconciling efficiency and equity goals in environmental protection