

NATIONAL AFFAIRS

China

**Environment Policy and Law for
Sustainable Natural Resources Development**

– Issues and challenges –

by Lei Shen, Shengkui Cheng, Shuzhong Gu and Yao Lu*

Introduction

Over the past three decades China has pursued a high-growth, resource-intensive development strategy. This has led to increasingly severe environmental problems that are closely related to the development and utilisation of natural resources. From a global perspective, China is an important country simply by virtue of its abundant natural resources, large population and rapid economic growth. Whilst it faces a number of environmental threats, China is increasingly participating in many key international environmental treaties. Politically, there is now greater public pressure on the need to make further progress in protecting the environment and coordinate population, resource, environment and urbanisation development.

Environmental issues in China have become the subject of attack from international politicians. The converse side of the environmental challenges that China must overcome is the commercial opportunities available to sufficiently forward-thinking international investors. The latter, however, often consider that the Chinese legal regulatory regime and policies for environmental protection have been inefficient and belated. This leads to the necessity of this article, in which some issues in environmental law and policy related to the development of major natural resources in China are systematically examined and analysed.

The purpose of the second section of this article is to overview some environmental problems concerning the development of natural resources in China. It examines the major features and significance of Chinese domestic environmental protection law, focusing on the environmental regulatory framework in China. The third and fourth sections analyse the current situation in environmental law and policy in China; then the issues and challenges of China's environmental law and policy are briefly examined. Finally, a short conclusion is given.

Overview of environmental problems relating to the development of natural resources

China is endowed with abundant natural resources. To mention but a few, it has the second largest deposits of coal in the world, the greatest hydroelectric potential and biggest deposits of metals and non-metals; and it also has the greatest agricultural and industrial mineral output in the world; it is also very richly endowed in terms of biodiversity. Offsetting these advantages, it has the largest population (1.3 billion), heavy dependence on coal for energy, and the fastest-growing economy, which places a tremendous strain on air and water quality and other natural resources.

Among Asian cities, the worst air pollution is found in China. Nine out of the ten cities with the worst air pollution in Asia and six out of the ten worst worldwide are located in China (*South China Morning Post*, 1998). Data reveal, however, that ambient concentrations of particulate matter and sulphur dioxide are falling in most cities. In a few large cities the concentration of nitrogen oxide is rising due to growing vehicular emissions. Most of the great rivers and lakes of China are badly polluted, with no discernible trend of improvement. For more than 200 days each year, the Yellow River fails to reach the sea, due to heavy withdrawals for agricultural use. Falling groundwater levels in the north, deforestation, loss of grassland, desertification and soil loss are all major threats to China.

Although China has made noteworthy progress in improving some aspects of its environment, and halted deterioration in others, many serious environmental problems resulting from resource utilisation remain. Concerns relating to biodiversity and habitat losses have also been raised. Logging has exceeded replanting for many years; per capita forest coverage of 0.12 ha is one-sixth of the world average. Excessive grazing by livestock destroys natural grasslands, semi-desert areas and alpine regions. Subsistence hunting, unmonitored hunting on the Xizang, Xinjiang and Inner Mongolia plateaus, and illegal trade in endangered species all threaten animal populations. Soil erosion caused by poor agricultural practices and illegal mining, acid rain, falling water tables, desertification, the conversion of wetlands to agricultural use, and climate change are other noteworthy issues (see Table 1). ➤

* All authors are at the Chinese Academy of Sciences, 3 Datun Road, Andingmenwai, Chaoyang District, Beijing 100101, People's Republic of China. Lei Shen is Professor at the Institute of Geographical Sciences and Natural Resources Research (IGSNRR) at the above institution. Tel.: +86 10 64889429; fax: +86 10 64854230. Email: shenl@igsnr.ac.cn or <http://www.cnr.org/shenlei/index.html>.

Table 1. Major environmental issues in China

Issues	Major causes	Primary areas affected
WATER QUALITY High levels of conventional pollutants High levels of toxic substances	Untreated industrial waste Untreated household and agricultural waste Misuse and overuse of chemicals	All major rivers and lakes in China Most cities in China Surface water of most rural areas
WATER QUANTITY Shortages of surface water Shortages of groundwater	Misuse and overuse of water resources Overuse of groundwater	Northwest part of China Yellow River Cities in North China
COASTAL ENVIRONMENT Water pollution Declining fisheries	Untreated industrial and household waste Excessive fishing	Bo Sea and Eastern Sea All coastal areas
AIR QUALITY High level of SO ₂ High level of TSP Acid rain High level of NO _x High level of PM ₁₀	Lack of adequate control on industrial sources Lack of control on household sources and construction sites Lack of adequate control on vehicle emissions Wind-blown dust	All China Cities in North China Central, South, Eastern and Southwestern China Beijing, Shanghai and Guangzhou Beijing
INDUSTRIAL SOLID WASTE Loss of lands Groundwater pollution Tailing and stocks of waste ores	Low recycle rate Lack of proper regulation	Urban areas Mine sites
HOUSEHOLD SOLID WASTE Open dumps and unsanitary landfills	Lack of proper regulation Lack of treatment facilities	All cities in China
LAND USE Soil erosion Loss of cropland	Deforestation and farming Urbanisation	Upstream of Yangtze and Yellow Rivers All China
FOREST/GRASSLAND Forest loss Degradation of grassland	Deforestation Misuse and overuse of grassland	All China 90% of total grassland
BIODIVERSITY Loss of habitats Endangered species	Deforestation Conversion of wetlands Pollution Illegal hunting and logging	Southwestern and Northeastern China

Source: compiled from Geping Qu and Jinchang Li (eds) (1994) *Population and the Environment in China*, and Asia Environmental Outlook of Asian Development Bank (ADB) *People's Republic of China: Country Environmental Policy Integration Report*. See also <http://www.adb.org/environment/ao/pub/documents/china.pdf>.

Whether China's steady economic development could support its population in harmony with healthy environmental conditions and sustainable natural resources in the future remains to be seen. Future interactions with international resources and markets is also influenced by the development of China's ecology and environment. All of this poses a challenge to environmental law and policy for the development of sustainable natural resources in China.

Environmental regulation framework for natural resources development

The Chinese government paid little attention to environmental protection law until China's participation in the 1972 United Nations Conference on the Human Environment (UNCHE) held in Stockholm. Twenty years later, in 1992, at the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro, China made a commitment to conscientiously implement resolutions

adopted at the Conference (Palmer 2000) and enhance environmental legislation and enforcement concerning the sustainable development of natural resources.

Over the last 25 years, the Chinese government has set up over 20 statutes directed at environmental and natural resource preservation and management. It has a far-reaching system of charges applied to sources of natural resources development and industrial pollution. Substantial investments are being made to protect the environment and natural resources: approximately 1 per cent of gross domestic product (GDP) at present and projected to rise to 1.5 per cent of GDP during the next five years.

Institutional framework for the environmental policy of natural resources development

The institutional framework within which Chinese environmental policy is developed is highly complex. The Chinese State is a multilayered institutional structure with

territorial divisions at central, province, city, county, township and village levels (Jahiel 2000). The organisation of environmental protection reflects the fundamental features of the Chinese State.

The State Environmental Protection Administration (SEPA) is a government unit responsible for environmental protection. It exists at the central level as the chief agency addressing the nation's environmental issues. This unit falls under the direct leadership of the State Council, from which it receives almost all its funding. The Committee on Natural Resources and Environmental Protection supports SEPA in its efforts to formulate national policy under China's chief legislative body, the National People's Congress (NPC).

SEPA is replicated as Environmental Protection Bureau (EPBs) or Offices (EPOs) down through successively lower levels of the administrative hierarchy at the



Courtesy: The Economist

provincial, city, district, county and, in some places, township levels. The chief responsibility of these local environmental units is to enforce laws and implement policies designed by SEPA and to assist in drafting local regulations to supplement central ones. EPBs and EPOs thus work directly with local factories and other polluters, as well as with industrial bureaux and local government actors (including planning commissions, economic commissions, People's Congresses and mayors).

Over many years environmental protection agencies at all administrative levels in China have been assisted in their regulatory work by a system of interministerial umbrella organisations, known as Environmental Protection Commissions. They also receive support from a system of monitoring stations that provide the technical information necessary to formulate and implement environmental regulations.

The national environmental protection network has now been established. This network covers environmental protection agencies, commissions and monitoring stations, and has principal responsibility for environmental

management – from air and water pollution to solid and hazardous (including nuclear) waste, from wildlife conservation to wetlands preservation in all fields of natural resources development.

Industrial ministries (and bureaux) and some companies have assumed daily responsibility for industry-specific environmental management. The courts and the Chinese Communist Party (CCP) are also involved in the enforcement of environmental regulations, though not on a daily basis. EPBs turn to the courts as a last resort to enforce administratively environmental laws that polluters refuse to adhere to.

Environmental legislation framework

The National People's Congress is the highest-level law-making institution in China. The NPC's Standing Committee may enact and amend all laws with the exception of "fundamental laws" reserved for the NPC itself. The State Council may enact administrative regulations in accordance with the Constitution and applicable law.

At the provincial and special municipality (Beijing, Chongqing, Shanghai and Tianjin) level, the People's Congresses and their standing committees may enact local regulations provided they do not contravene the Constitution and applicable national laws and administrative regulations.

All units of the Chinese government derive their authority from a single document, the Constitution of the People's Republic of China of 1982, as amended in 1988 and 1993. The principal sources of the body of environmental law are the Constitution, the basic laws, international environmental treaties that have been ratified by the NPC, the State Council Regulations, and regulations promulgated and enforced by bodies subordinate to the State Council, local laws and interpretations of law. Article 9 of the Constitution affirms state ownership of all mineral resources, waters, forests, grasslands and other natural resources except those owned by collectives in accordance with the law.

Several provisions in the 1982 Constitution reflect the significance attached to environmental protection and resources utilisation. Article 9 of the Constitution requires, among other things, that "the State ensures the rational use of natural resources and protects rare animals and plants. The appropriation or damage of natural resources by an organisation or individual by whatever means is prohibited." In addition, Article 26 declares: "the State protects and improves the living environment and the ecological environment. It prevents and remedies pollution and other public hazards" (Dong 1997).

Apart from these Constitutional provisions, there are two laws that are of fundamental importance to the development of natural resources in Chinese legislation and are in part related to environmental issues. Thus, the 1986 General Principles of Civil Law¹ provide a number of environmentally relevant provisions, as Articles 80 and 81 require that those who lease state-owned land or other natural resources are obliged to "manage, protect and properly use" the land or natural resources. In addition, in the section of the law dealing with personal rights, it is pro-

vided that citizens enjoy the right to life and health. Civil liability will arise if damage is caused by hazardous operations – such as those involving the use of high-pressure, high-voltage, combustible, explosive, highly toxic or radioactive substances (Article 123), or where damaging pollution occurs in violation of state provisions on environmental protection and pollution prevention (Article 124) (Dong 1997, p. 73).

The Criminal Law 1979² defined a number of offences and punishments relating to environment damage, and the Environmental Protection Law (1989) at Article 43 imposes criminal responsibility for “serious environmental pollution” (Dong 1997, p. 73). Industrial accidents, misuse of dangerous materials or products, and unlawful use of forestry resources, aquatic assets and wildlife could also give rise to criminal liability under the 1979 Criminal Law, which was augmented by various special rules introduced by the Standing Committee of the NPC. The revised Crimi-

nal Law, which came into force on 1 October 1997, contains new provisions in a special section that specifically deals for the first time with “the crime of sabotaging the protection of the environment and resources”. These provisions clearly define the crimes and heavy punishments involved in polluting or destroying land, water, air, forests, mineral deposits or wild animals, illegally importing hazardous wastes, and so on. In addition, officials responsible for supervising and managing the protection of the environment may be liable for criminal punishment for deviant acts committed in the course of duty.

1978 symbolised a new legal era in China because China implemented the opening policy afterwards and paid special attention to environmental legislation. Thus, the Environmental Protection Law 1979 (for trial use) was one of the major law codes that was promulgated by the NPC and its Standing Committee. The Environmental Protection Law (amended in 1989) provides basic princi-

Table 2. Key legislation, regulations and standards for natural resources

	Key legislation, regulations and standards
General ¹	PRC Constitution 1982 PRC General Principles of the Civil Law 1986 PRC Criminal Law 1979 Trial Environmental Protection Law 1979 (ratified 1989)
Water ¹	Water Resources Law 1988 Marine Environmental Protection Law 1982 Flood Control Law 1997 Water Pollution Prevention and Control Law 1984 (amended 1996) Environmental Quality Standard for Surface Water (GB3838-88) Combined Wastewater Effluent Standards for Type 1 and Type 2 Pollutants (GB8978-96) Quality Standard for Groundwater (GB/T 14848-93)
Land and living resources ²	Land Resources Law 1986 Land Administrative Law 1998 Agriculture Law 1993 Fishery Law 1986 Grassland Law 1985 Forestry Law 1984 Law on Protection of Wildlife 1988 Law on Water and Soil Conservation 1991
Minerals and energy ²	Mineral Resources Law 1986 (amended 1996) Coal Law 1995 Electricity Law 1995 Energy Conservation Law 1997
Air ¹	PRC Air Pollution Prevention and Control Law of 1987 (amended 1995) National Ambient Air Quality Standard (GB 3095-82) Comprehensive Air Emission Standard (GB 16297-96) Emission Standard of Air Pollutants from Industrial Furnaces (GB 9078-96) Emission Standard of Odour Pollutants (GB 14554-93) Administrative Regulations for Urban Smoke and Dust Control Zone 1987 Emission Standard of Air Pollutants from Thermal Power Plants (GB 13223-96) Emission Standard of Air Pollutants from Chemical Furnaces for Coking (GB 16171-96) Emission Standard of Air Pollutants from Cement Industry (GB 4915-96)
Waste ¹	Prevention and Control of Solid Waste Pollution 1995 Regulation on the Control of Chromium Pollution 1992 Control Standard on Poly-Chlorinated Biphenols (PCBs) for Wastes (GB 13015-91)
Other ¹	Regulations for Radiation Protection (GB 8703-88) Regulation for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals 1994

Source: ¹ Shelley Clarke and Felicity Thomas (eds) (1997) *Pollution Control in the PRC: An Investors' Guide*; ² The Edition Board of Law Yearbooks of China (ed.) (various years) *Law Yearbooks of China 1990–1997*.

ples and methods to protect the environment, prevent pollution, and afford rehabilitation possibilities for existing problems of pollution. One significant feature stipulates the rights and obligations of the State and, in particular, enterprises and institutions in regard to environmental protection (Wang and Zhang 1997). Article 4 requires the incorporation of state environmental protection plans into national socio-economic plans, and stipulates that the State co-ordinate the task of environmental protection with economic construction and social development. Article 7 imposes on "the competent departments of environmental administration under the State Council to supervise and manage environmental protection work throughout the country." Similarly, that article – together with Article 16 – requires that provincial, municipal and autonomous government supervise and manage environmental protection tasks within the areas under their jurisdiction. Units causing pollution are obliged by Article 24 to incorporate environmental protection into their plans, establish an environmental responsibility system, and adopt effective measures for the prevention and control of pollution. A polluting unit is required by Article 27 to register with the relevant authorities. The "polluter pays" principle is expressed in Articles 28, 39 and 41. Criminal liability for pollution and damage to natural resources is specified in Articles 43 to 45.

Finally, the law (1989) provides that the provisions of international environmental law treaties to which China has concluded or acceded apply in China even if they differ from those of Chinese domestic law, unless China has announced reservations in regard to the relevant provisions (Article 46) (Dong 1997, p. 75).

In addition to the above laws and provisions, a number of legislative provisions have been introduced throughout the 1980s and 1990s. Table 2 briefly shows the key legislation, regulations and standards for natural resources in China. These are mainly related to laws, regulations and standards with respect to the development, utilisation and trade of agricultural and industrial natural resources. It is noted that the State Council and ministries and other bodies under the State Council, such as SEPA, may issue administrative regulations and rules governing environmental welfare. These are often elaborations of laws introduced by the NPC and its Standing Committee. Moreover, a wide variety of departmental provisions were enacted in the 1980s and 1990s to regulate the dumping of waste and to provide emission standards for air, water and noise pollution.

The current situation in environmental policy and law

Development of environmental policy

Official environmental policy in China dates back to the early 1970s, although policies prior to 1978 resulted in severe environmental problems of pollution, land degradation and loss of arable land. The 1980s and 1990s saw SEPA's increasing independence and the promulgation of a significant body of environmental laws and standards. Over the same period, ambitious environmental investment programmes were instituted, with funding from

international sources such as the World Bank and the UN Development Programme (UNDP).

Governmental targets and programmes at central, provincial and municipal levels have been in place since 1992. The Chinese government has adopted a range of policies and programmes for controlling environmental pollution and ameliorating resources shortages to 2010. Table 3 lists the key environmental initiatives and planning documents underpinning China's environmental policy since 1992.

The Five-Year Plans or long-term outlines are the fundamental government documents, which identify policies and priorities for environmental spending during each five-year period. The most important is the Trans-Century Green Plan, which runs from 1996–2010. According to SEPA's estimate, this plan needs to invest RMB 450 billion (some 1.3 per cent of GNP) (Information Office of the State Council 1991). Such expenditure – a substantial portion of which is envisaged as coming from foreign aid sources – is to be targeted at new pollution control equipment, remediation and urban environmental infrastructure (Tromans 1998).

Development of environmental legislation

As shown in Table 2 and discussed above, China's 1982 Constitution stipulates the general principles of environmental legislation. Thus, Article 26 of the Constitution expressly refers to environmental protection, affirming that "the State protects and improves the living environment and ecological environment, and prevents and remedies pollution and other hazards." China's Basic Law on Environmental Protection was passed in 1979 and amended in 1989. Within the framework of that law a large number of more detailed laws were enacted and implemented during the 1980s and 1990s. These involve environment protection and natural resource conservation, such as marine, forest, grassland, fisheries resources, land, water, mineral and energy resources, the prevention of air pollution, water and soil conservation, wildlife protection, noise control and prevention, and others.

More recently, an integrated natural resources law has been proposed. In addition, the National Environmental Legislative Plan for 1998–2003 was drawn up. Many new laws are being enacted, including the Clean Production Law, Environmental Impact Assessment Law, amendments to the Marine Environmental Protection Law, Natural Resources Conservation Law, Toxic Chemicals Management Law, Industrial Waste Reutilisation Law, Radioactive Pollution Prevention and Control Law, and Renewable Energy Law (Information Office of the State Council 1991). The foundations of these laws are environmental standards covering ambient environmental quality, emissions standards, environmental technology and sampling standards. Well over 3000 such standards have been adopted nationally (Wang and Zhang 1997, p. 445).

Specific policy and legal instruments for the development of natural resources

China has employed a number of general environmental policy and legal instruments to aid in environmental protection. The three most important instruments are En-

Table 3. Key initiatives and policy documents in China

Countermeasures, programmes and plans	Approving agencies and dates	Main contents
Ten countermeasures in China's environment and development	Central Committee of CPC, State Council, August 1992	A programme document guiding China's environment and development
China's environmental protection strategy	NEPA, SPC, 1992	A policy document about environmental protection strategies
China's national programme for gradually phasing out ozone layer depletion Substances	State Council, January 1993	A concrete programme for implementing the Montreal Protocol
China's national environmental protection plan (1990–2010)	State Council, September 1993	Ten-year action plan on China's environmental protection in different fields
China's Agenda 21	State Council, March 1994	White Paper on national pollution, environment and development at a national level
China's biodiversity conservation action plan	State Council, 1994	An action plan implementing the Convention on Biodiversity
China's urban environmental management study (sewage and garbage)	NEPA, MOC, 1994	A study on environmental management focusing on urban sewage and garbage
China: issues and options in greenhouse gas emissions control	NEPA, SPC, 1994	An analytical study on greenhouse gas emissions, with suggested measures and costs
China's Agenda 21 for environmental protection	NEPA, 1994	A ministry-level iteration of China's Agenda 21
The ninth Five-Year Plan and Long-Term Programme compendium by 2010 for national environmental protection	July 1996	A plan guiding national environmental protection between 1996-2000 and for the next 15 years

Source: National Environmental Protection Agency (NEPA) (1997) *Executive Summary of China's Trans-Century Green Plan* (note: in March 1998, NEPA was officially renamed and redesignated as SEPA).

environmental Impact Assessment (EIA), Three Synchronicities Policy (TSP), and the Polluter-Pays Principle (PPP).

The EIA was introduced in 1979 as an aspect of the 1989 Basic Law. Its process is usually operated by the local EPBs, though for major projects of strategic importance (for instance, oil refineries and power plants) SEPA is also likely to be involved. The TSP was developed in the early 1980s and is reflected in Article 24 of the 1989 Basic Law. It requires that aspects of pollution control must be addressed at the planning phase of projects. The three synchronicities include informing the local EPBs of the proposed pollution control measures; construction of the facility; and inspection by the local EPBs following commissioning. The PPP is embodied in Article 41 of the Basic Law. Since 1979, China has operated a version of the "polluter-pays" principle, whereby regulatory authorities may levy financial charges or penalties from an industry that exceeds local or national emissions standards. Charges are also made for the grant of permits. The system has been most often applied to discharge into rivers, and constitutes an important source of revenue, which can be used by local EPBs to finance environmental improvements or to compensate victims of pollution.

Issues and challenges

The analysis of the environmental regulatory framework in China indicates that it faces a number of chal-

lenges, not least in the aspects of ineffective enforcement, insufficient capital investment and lack of public participation. At the same time, it still has a long way to go in terms of further development of environmental policy and law.

Ineffective enforcement

The prominent issue is the ineffective enforcement of environmental law in China. This is the result of a number of factors, including limited resources, the legal and administrative tradition which militates against prosecution, the imprecision of some legislative drafting, and perhaps most importantly, the greater priorities often accorded to economic development (Wang and Zhang 1997) over the environment.

Whether, and how vigorously, environmental law is enforced will also to some extent depend on the relevant governmental interests and the personalities involved: many of the major polluters have been, and still are, state-owned enterprises, such as metal-processing plants and power-generating plants. The interests of such enterprises are often effectively represented by the presence of their sponsoring ministries on the local Environmental Protection Commission, which plays an important role in standard setting and compliance policy. However, the large amount of small-scale polluting enterprises (mainly in mining), private investors (both foreign and domestic), and

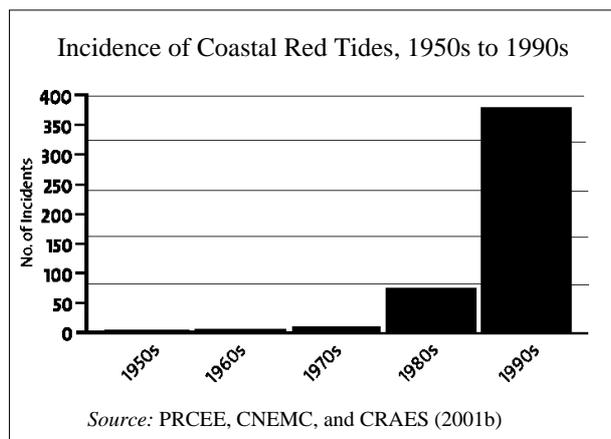
the sheer geographical size of China make the enforcement of environmental policies and laws difficult and, thus, inefficient.

Strained financial resources

One of the main challenges to the implementation of environmental law and policy in China is the severe limits to finance in general and foreign exchange in particular.

The World Bank has played an important role in not only assisting China's integration into the world economy and alleviation of poverty, but also improving China's environment. The Bank provided a large amount of capital support in funding environmental projects in China, and applied its own environmental requirements to the projects it financed. With respect to the financing process on relevant environmental policy issues, the Bank also sought to engage in dialogue with a view to bringing about improvements.

The UNDP is another important source of funding. Since 1992, it has focused specifically on sustainable development, including environmental regeneration, by locally based initiatives, development projects coupled with policy reform, and the use (where possible) of market-based approaches. The UNDP provides about \$350 million a year in assistance to China, on projects such as rural development and environmental preservation. Between 1993 and 1996 there were 405 aid-funded projects in China with a total value of \$3.2 billion (Wang and Zhang 1997, p. 445). In addition, the European Union has agreed to



Courtesy: China: Air, Land, and Water

provide 13 million ECU of financial assistance in a programme involving eco-management training in China. The UN Environment Programme (UNEP) has also provided substantial funding for ISO 14001 training for Chinese companies. During 1997 China adopted the ISO 14001 management system, and created an administrative body for accreditation and certification systems: the China EMS Accreditation Instruction Committee. The China Centre of Environmental Management Systems provides approved training, and by late 1997, some 200 Chinese environmental auditors had been trained (Wang and Zhang 1997, p. 446).

Lack of NGOs and public participation

Experience in developed countries has shown that the role of NGOs and public participation are fundamental components of environment law and policy. Acting in an environmentally responsible way is an effective deterrent to polluters. It also gives impetus to government efforts to protect the environment.

Unfortunately, the Western-style NGOs largely do not exist in China at present. There are several state-sanctioned pressure groups, for instance Friends of Nature, and the Beijing Environmental and Development Institute, which mainly operate at a local and national level. Some international NGOs, however, are becoming increasingly interested in and active in China. Over the past decade, the Worldwide Fund for Nature (WWF) has been active on natural conservation projects such as preserving the giant panda in China, and it opened an office in Beijing in 1997.

In the past, China's environmental protection projects were in most instances carried out by the government. When people's environmental interests are violated, they commonly turn to administrative departments for help, rather than resorting to law and using personal means to resolve environmental disputes (Qu and Li 1994).

More recently, however, it has seemed that the government should do all it can to help the public play a part in environmental protection. The public will help to safeguard their interests if they are aware of the current environmental degradation. The most effective way to mobilise the masses is to help create an environmental culture, or a set of attitudes towards the environment. The government and media need to encourage this culture to form. If successful, the resulting change in public awareness will provide China with a broad foundation for the implementation and enforcement of environmental policy and law, thus preventing degradation, creating markets for environmentally sound products and developing a 'green' resource industry.

Conclusion

Environmental law includes a broad range of legal measures designed to regulate activities by individuals and organisations that affect the natural resources and environment. As China is deeply involved in economic transition and political restructuring, the need for environmental protection is considerable. This article has systematically examined major legal problems concerning the development of natural resources and the environmental regulatory framework. It has analysed the current challenges in environmental policy and law, noting that the establishment and enforcement of environmental policy and law largely fall under the domain of three centralised organs (the NPC, the State Council and SEPA). There are five primary sources of environmental law in China, that is, a) the Constitution; b) the basic laws; c) international treaties and agreements; d) regulations promulgated by the State Council and its subordinate institutions; and e) laws established by the provinces, autonomous regions and municipalities. Only when there is more public participation in environmental policy will environmental law in China be able to be more effectively enforced. ➤

Acknowledgements

This article was completed under the auspices of a research project by Knowledge Innovation Engineering at the Chinese Academy of Sciences (Project No.: KZCX2-SW-318-01-01), combining an earlier study within the Centre for Energy, Petroleum and Mineral Law and Policy at the University of Dundee, Scotland in 2001. Mr Shen would like to thank Dr Sergei Vinogradov, who gave generous supervision and helpful suggestions.

References

- Asia Environmental Outlook of Asian Development Bank (ADB), *People's Republic of China: Country Environmental Policy Integration Report*. See also <http://www.adb.org/environment/aeo/pub/documents/china.pdf>
- Clarke, Shelley and Thomas, Felicity (eds) *Pollution Control in the PRC: An Investors' Guide* (London: Environmental Resources Management, 1997).
- Criminal Law of the People's Republic of China*, in Edition Board of Law Yearbook of China (ed.) *Law Yearbook of China 1987*, 142–151 (Beijing: Law Publishing Press, 1987).
- Dong, Songqiao (1997) *To protect the environment in line with the law and to beautify our homeland*, 3 China Law 5.
- General Principles of Civil Law in the People's Republic of China*, in Edition Board of Law Yearbook of China (ed.) *Law Yearbook of China 1987*, 68–76 (Beijing: Law Publishing Press, 1987).
- Information Office of the State Council of the People's Republic of China (1991) *China seeks balance between*

development and environment (China Intercontinental Press).

- Jahiel, Abigail R. (2000) *The organisation of environmental protection in China*, in Richard Louis Edmonds (ed.) *Managing the Chinese Environment*, p. 34 (Oxford University Press).
- National Environmental Protection Agency (NEPA) (1997) *Executive Summary of China's Trans-Century Green Plan* (Beijing).
- Palmer, Michael (2000) *Environmental regulation in the People's Republic of China: the face of domestic law*, in Richard Louis Edmonds (ed.) *Managing the Chinese Environment*, p. 64 (Oxford University Press).
- Qu, Geping and Li, Jinchang (eds) (1994) *Population and the Environment in China*, p. 199 (Colorado: Lynne Rienner Publishers).
- South China Morning Post*, 18 April 1998.
- Tromans, Stephen (1998) *China: current issues in environmental policy and law*, 12 Environmental Monitor: OGLTR, p. 444.
- Wang, Chenguang and Zhang, Xianchu (eds) *Introduction to Chinese Law*, pp. 523–539 (Hong Kong: Sweet & Maxwell Asia).

Notes

¹ *General Principles of the Civil Law of the People's Republic of China*, in Edition Board of Law Yearbook of China (ed.) (1987) *Law Yearbook of China 1987*, pp. 68–76.

² *Criminal Law of the People's Republic of China*, in Edition Board of Law Yearbook of China (ed.) (1987) *Law Yearbook of China 1987*, pp. 142–151. 