

CHINA GOING GREEN

A CIVIL SOCIETY REVIEW OF 20 YEARS OF
SUSTAINABLE DEVELOPMENT



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Foreword

The international agreements signed in 1992 in Rio have had significant ramifications for environmental, social and economic development. However, today's patterns of development are still proving unsustainable. With increasing greenhouse gas emissions, desertification, water pollution, and reduced biodiversity, the world is facing even more serious environmental problems than it did twenty years ago.

Rio+20 is not only a chance for negotiators to review Agenda 21, it's also an opportunity to reflect on the past twenty years. Jointly, six Chinese NGOs have sought the expertise of more than twenty authors to initiate this review.

The report adopts the following criteria:

- Independence

Every chapter contains opinions from at least five different stakeholders, and is informed by their varying experiences, views and perspectives. Despite these differences, the conclusions are not affected. The report is also completely independent of the government.

- Bottom-Up

This report contains analysis and observations on the past twenty years of sustainable development in China, and is a voluntary initiative from civil society, making it unique from other reports.

- Public Participation

This report reflects the evolution of China's civil society, especially for environmental organisations. Since 1992, these

organisations have become one of the most vibrant and vocal sectors in promoting sustainable development.

- Original and Honest

The writing process involved a large number of interviews across a wide range of sectors, and offers a unique reflection of societal views on sustainable development. While it may reflect contradicting opinions, it is completely original.

- Interpretation

The report integrates the viewpoints of multiple stakeholders with analysis of law, policy and research, provides credible interpretation of sustainable development in China, and offers fresh ideas on how to move forward.

This report showcases various examples of how civil society in China is involved in promoting sustainable development. It also indicates how China's green transformation is still in its infancy and has much to improve on. Achieving a sustainable economy will require both international cooperation as well as public participation. Twenty years ago, there were no representatives from Chinese NGOs participating in the 1992 Rio summit; twenty years later, Chinese environmental NGOs, along with entrepreneurs and youth, are sending more than fifty delegates to Rio to participate in this historic meeting. Rio+20 is also the first time Chinese NGOs will engage in cross-sector cooperation on an international stage. However, Rio+20 is not the end-point—rather, it will mark the beginning of NGOs and other sectors joining forces in advancing a genuine green transformation in China.



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Chapter 1

Introduction

1.1

Reflection and hopes for the environment and sustainable development

ZHENG Yisheng

Reflection and hopes for the environment and sustainable development

It has been twenty years since the United Nations Conference on Environment and Development, known as the Rio Summit. Despite some progress however, the world has yet to move on to a path of sustainable development. What progress countries have made with regard to policies, technologies and international cooperation has proven insufficient to counter two far more obstinate trends, the unabated deterioration of the global environment on one hand, and growing global economic inequality on the other. The prospect for a common future depends on all of humanity sharing resources and working together. Yet, countries continue to behave in ways that reflect strategies largely shaped by the logic of international politics. It seems fair to characterise the current era as one that is marked by humanity's collective propensity towards double-standards, self-contradiction and inaction. Evident as the necessity has now become for societies to transform their model of development, many people seem unwilling to alter their accustomed ways of life and work.

So far as China is concerned, the country has been portrayed at once as "the biggest problem" in relation to the issue of climate change and also as a "saviour" within the context of the global financial crisis. However, the contradiction between these different appraisals is the very result of the severing of global environmental problems from economic problems, which are of course closely connected. The industrialisation of the Chinese economy is still a work in progress, yet its continuation must now take place in a world where the kind of natural resource abundance and ecological robustness that existed during the economic development

of developed countries no longer does. In the short run, China may constitute a driving force in maintaining the current model of economic development and fuelling its continuing expansion around the globe, yet in the longer term, the country might well become a powerful force for the creation of a different model. Given the sheer size of its economy, the model China is currently imitating will see its effectiveness culminate before eventually running out. This, without a doubt, is the most serious challenge facing China today.

Part I. Review

A. What China has achieved

After the Rio conference in 1992, China's Agenda 21 was adopted by the State council on 25 March 1994, making it the first national Agenda 21 in the world. This move helped to strengthen the nation's commitment toward environmental protection as a fundamental principle of government policies, as illustrated by the subsequent formulation of a series of national development strategies aimed at: building an economy that is environmentally-friendly and resource-efficient (2004), a circular economy (2004), a low-carbon economy (2009), transforming the economic development model (2010), and realising green development (2011). Moreover, praiseworthy experimental efforts were made by government agencies in charge of environmental management as well as enhanced statistical compilation and analysis aimed at greening economic decision-making and practices.

The institutional capacity of the state in enacting environmental protection has greatly increased. Environment laws

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Professor ZHENG Yisheng is a prestigious researcher in the environment and development field with a high international reputation. From Professor Zheng's rich experience in industry, government and academic institutions, he has been the leading expert of several key projects and research reports on sustainable development in China. He has been affiliated with several Chinese and international institutions, including Asian Development Bank, UNDP, China Environment Society, and China Ecological Economics Society.

represent the fastest-growing legislative area in the past two decades. Not only have environmental agencies seen their stature rise and clout grow within the bureaucratic hierarchy, but they have also matured in terms of organisational development.

Industries are becoming more resource efficient, and technological developments in renewable energy are advancing rapidly. For example, China is now first in the world in terms of wind power production capacity. The level of environmental awareness among the public has increased markedly. Gone are the days of the complete absence of civil society in China. Today, civil society organisations are involved not only in a variety of environmental education efforts, but also increasingly in environmental governance. In recent years, public oversight and monitoring of the environmental conduct of Chinese and foreign businesses has grown in both intensity and scale, and now represents a formidable form of direct public involvement in environmental management.

Some local improvements notwithstanding, the overall condition of China's environment continued to deteriorate over the past two decades. While water and energy intensity per unit of economic output has greatly decreased, they are still far above the levels for developed countries. And as the aggregate demand for natural resources keeps rising, so does the toll the Chinese economy takes on the environment.

These facts can only give us greater cause for concern than for satisfaction. Still, considering the historical and current profile of China's natural resource endowment, its demographics, and the fact that it is undergoing the most intense and demanding phase of industrialisation, the country deserves credit for what achievements it has made – and certainly not without great difficulty – toward mitigating its negative environmental impact.

B. Internal causes preventing more effective action

In China, the government plays a decisive and leading role in environmental management. However, large gaps exist between what the government intends or pledges to do on the one hand and what it manages to achieve on the other. The ineffectiveness of the law is partly to blame for this. More specifically, Chinese legal codes tend to treat entities in either the public or the private sector, including self-employed entrepreneurs, much more harshly than they do government agencies whose job it is to regulate and to supervise these entities. In addition, the law tends to afford weak protection for third-party entities that function as watchdogs for government conduct.

Under the current public financing system, governments at the provincial and sub-provincial levels are motivated by powerful incentives to pursue economic growth. Consequently, repair of environmental damage often lags far behind environmental destruction.

C. Global inter-connectedness

While we are fully cognizant that environmental voices around the world are calling on China to change its economic development model, global resource allocation is dictated by the powerful force of economic globalisation. That the Chinese economy has been assigned the role of the "factory of the world" reflects the profit-maximizing imperative of the competitive global market. It stands to be questioned, then, should China act on its aspiration for greater control of its patterns of consumption and higher levels of technological self-sufficiency, would its efforts not be at odds with global market forces? The drop in Chinese exports during the global financial crisis offered a vivid illustration of the adverse consequences "structural adjustment" can have for unemployment. Another area in which the forces of the global economy undercut China's pursuit of a new development model is

material culture and consumption patterns: the massive success of global corporate capitalism to foster a culture of consumerism amongst China's population has all but condemned China's own efforts to encourage its citizens to adopt sustainable lifestyles and consumption habits to ineffectiveness. This attests to how difficult it is for any country, especially developing countries, to achieve sustainable development on its own. Absent genuine mutual understanding, there can be no effective cooperation among countries.

Part II. China's potential for change and contribution to sustainable development

Pointing out the need for global cooperation to achieve worldwide sustainable development is by no means to shirk China's own responsibility. Instead, it puts such responsibility into perspective, and deepens our understanding of it. It behoves China to actively explore and experiment with alternative socio-economic development models that promise to allow more people to enjoy the benefits of economic modernisation, and that promote positive relationships with the international community. These efforts will no doubt take time, and require great determination, but they must begin with feasible green reform as the first step.

A. As China continues to explore ways for implementing a green economy, it has much to learn from the experiences of other countries.

Greater value should be placed on creative pluralism, and on the need for enlisting as many people as possible to participate in building a green economy. All businesses, regardless of their size or country of origin, can potentially sprout "green shoots", and should be given the space and the opportunity to innovate. Interference in market competition through coercive government actions intended to impose any particular model of technology or institution

uniformly on society is unjustified, and should not be allowed.

Adoption of green economic accounting methods and practices ought to proceed with caution. Statistical indicators should not be allowed to fall into the trap of means-ends perversion. That would only compromise the beneficial effects of new technologies.

Building a green economy requires more than greening investment. Unless embedded within and supported by a society that runs on green principles, sustainable economic development can only be but a mirage. Environmental management in China can be greatly improved by the gradual replacement of the current management model that depends on government “command and control” by one in which “checks and balances” among different social groups and agencies play a more prominent role. Legal, institutional and ideological recognition and affirmation of the different roles, functions, duties and rights of government, corporations and “third-party” entities - the so-called triumvirate for environmental management - are in order. Institutional safeguards should be established so as to allow these three parties to work together to achieve optimal outcomes.

B. The green economy is meant not as a replacement but rather a precondition for achieving the global objective of sustainable development.

China should try to become one of the first if not the first country in the world to adopt a new way of life and model of production. We should, starting today, advocate, explore and support a philosophy of life that values plentifulness without waste, and fulfilment free of decadence.

It is when we are working to overcome challenges that we find new paths forward. It is important always to remember to create and preserve ample

space for green innovation to grow. For example, the advantages associated with late-development should be readily seized upon. For developing countries, these advantages exist not only in the area of technology, where they can save on costly original research and early development, but also in those areas in which conditions remain largely open. Examples of these include new urban development, models of public transportation, undeveloped natural habitats, green insights and wisdom intrinsic to different cultural traditions. All of these constitute forms of resources developing countries can tap into.

Any society’s innovative potency is as great or small as the vitality of its civil society organisations. Besides the government and the market, civil society is another important player in the management of a country’s public affairs. It can function as a catalyst and/or an incubator, and is instrumental for achieving a lively and harmonious society.

C. Pushing for a united green force around the world and ‘deep justice’

Whether people are willing to face the causes of their shared problems squarely determines the measure of their joint efforts towards solving them. It is only when we fully recognise and take seriously the fact of the interconnectedness of all countries that we can deepen our appreciation of our own duties and responsibilities. And only then can we know how to tailor our solutions according to the nature of the problem, and how to treat the disease and not just alleviate symptoms.

Uneven development is a chief hazard. Both within and among countries, all and any effort aimed towards mitigating disparities in levels of development necessarily have positive environmental implications. We believe that a significant reduction in the degree of inequality between countries in terms

of material standard of living would be a boon and not a disaster for the world at large.

We can all readily understand how and why it might be difficult for genuine cooperation to take place in a world of severe material inequality (which in part reflects severe inequality in ecological resource allocation). Both developed and developing countries should commit themselves to adopting a new conception of human well-being and happiness. For developed countries, it would be wrong to insist on maintaining ecologically unsustainable lifestyles, and for developing countries, it would be unwise to try to emulate developed countries in that regard.

We must remain firm in our commitment to the principle of “common and differentiated responsibility” that was agreed to twenty years ago at the Rio Summit. Moreover, we should take the principle to a new level. That principle represents a bridge that humanity has built, that can connect us to a possible future of greater civility, deeper shared sense of responsibility, and deep and genuine justice. The hope is for a new kind of relationship between developed and developing countries to take shape, one in which the latter can secure not only the help they need from the former, but also the capacity and the freedom to develop on their own.

Green voices from around the world, but especially those originating from civil society in developing countries, should form a united front by coordinating and cooperating, and become a moral force for promoting a culture consistent with ecological principles.

We are of the belief that if all of humanity is willing to accept and adhere to the ideal of sharing, of both fortunes and hardships, most of us would be able to face the prospect of a common albeit uncertain future with equanimity, and maybe even optimism.

Chapter 2

Social and Economic Affairs

2.1 Poverty alleviation

LIU Yuan

2.2 Sustainable consumption and production

Patrick Schroeder

2.3 Public health

CAI Lingping

1. Poverty alleviation

Summary

China is the first developing country to have realised ahead of schedule the goal of halving extreme poverty, as agreed to in the United Nations Millennium Development Goals. The contributing factors include high levels of economic growth for a sustained period, implementation of government-led projects, improved targeting of poverty alleviation efforts, ideas and methods introduced from the international community, and the active advocacy of non-government organisations (NGOs) in community poverty reduction. The following observations draw on interviews with stakeholders including civil society organisations practitioners, academics, governmental officials and people experiencing poverty first-hand.

Main achievements

China's population in poverty, defined by daily consumption of less than US\$1.25, decreased from 835 million in 1981 to 173 million in 2008, or from 84% to 13.1% of the total population (World Bank, 2009). The country's achievements in poverty reduction included the following key aspects (State Council Information Office, 2011):

- The problem of subsistence living, and adequate food and clothing for the rural poor has been basically resolved in a stable, lasting and effective way
- Infrastructure, production and living conditions in poor areas have improved significantly. In key counties within national development-oriented poverty reduction programs, 60.9 per cent of rural households had access to tap water

A world without poverty and injustice.

-LIU Yuan

or well water by 2010, 88.1 per cent of villages had access to roads, and 98 per cent had access to electricity.

- Compulsory education in rural areas has been strengthened. By the end of 2010, in the same key counties, 97.7 per cent of children aged between 7 and 15 were enrolled in school, and the illiteracy rate of young and middle-aged people had decreased to 7 per cent
- The primary-level medical and health service system has been improved. Every township has a hospital, and most administration villages have a clinic. 91.4 per cent of rural residents were able to get timely medical service by 2010, and 93.3 per cent had participated in the new cooperative medical care system.

The priority given to development-oriented poverty reduction with government-led large-scale project implementation helps the poor escape poverty. Since 1994, the government has enacted three important anti-poverty programmes, The Seven-year Priority Poverty Reduction Programme, the 'Outline for Poverty Reduction and Development of China's Rural Areas (2001-2010)', and its follow-up from 2011-2020. The cumulative financial input from central and local government reached 144.04 billion Chinese Yuan between 2001 to 2010 (State Council Information Office,

2011), and large-scale projects were carried out in poverty-stricken areas. In particular, from 2001 the government identified 148,000 impoverished villages nationwide to be involved in the Integrated Village Development Program. By the end of 2010, some 126,000 villages had implemented programmes. This policy has been identified as one of the country's most successful poverty reduction measures.

Introducing leading ideas and techniques for poverty reduction from the international community is a new and increasing area for co-operation. Since 1995, the World Bank has begun loan projects for poverty reduction in China. The Chinese government has co-operated with the World Bank, the United Nations Development Programme and bilateral government agencies from the UK, Germany, Australia and Japan as well as international NGOs. According to official statistics, foreign investment grew to US\$1.4 billion by 2010 (State Council Information Office, 2011), with implementation of 110 foreign-funded poverty reduction projects covering 20 provinces (or regions) and more than 300 counties, benefiting nearly 20 million of China's poor. Meanwhile, international development concepts, effective poverty relief systems and mechanisms have been introduced and popularised in China, such as participatory poverty alleviation, micro-finance, project evaluation and management, poverty monitoring and evaluation. These imported approaches have improved the capacity for Chinese poverty relief and

systemic innovation.

A number of NGOs have made significant contributions to poverty elimination in rural communities. During past twenty years, the NGO community has been working in livelihood improvement, community culture development, local education, natural disaster management, people with special needs, agricultural technology promotion, medical and health promotion, women's development, culture protection for ethnic minorities, the protection and management of natural resources, and a range of other areas.

Specific support to vulnerable groups

The Chinese government has gradually established a 'Grand Strategy for Poverty Alleviation', which identified women, ethnic minorities, teenagers and disabled people as groups with special needs, and attempts to resolve the institutional factors related to these vulnerable groups in poverty. Unfortunately, the corresponding specific measures and implementation methods have seen slow progress. On the other hand, a number of NGOs have been active in community poverty reduction and play an important role in supporting vulnerable groups, and promoting the improvement of national policies.

Over twenty years, the government has taken action to relieve women's poverty through various national programmes, such as the construction of cisterns in dry areas, small loans and other infrastructure development and support of rural women

moving to urban areas for work.

Access to education for teenagers in poor areas of China has improved and the proportion receiving nine years compulsory education has greatly improved. Domestic NGOs are actively engaged in areas such as children's schooling, nutrition, multicultural education, vocational education, pre-school and other fields. In October 2011, the central government launched its Nutrition Improvement Plan for Rural Students. According to this plan, each student will be allocated 3 Yuan per day for nutritious meals, representing a commitment of 16 billion Yuan every year. The pilot covers 260 million students spread over 14 major areas including 680 counties and cities across China. This is a case of successful policy advocacy initiated by civil society.

Ethnic groups account for 8.5% of China's population, however over half of the population in poverty are from minority groups. Many argue that the major challenge of poverty reduction lies in ethnic minority areas. One of the basic judgements of the World Bank on poverty in China has been that "those with the double disadvantage of minority status and mountainous location have the highest poverty rate of 40% (28%) in the case of consumption (income) poverty. China's poverty situation is mainly concentrated in the western provinces, mountain and ethnic minority areas" (World Bank, 2009). The government has carried out various pilots responding to the diverse causes of poverty amongst ethnic groups. In the period 2001-2010,



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key rural counties in minority areas enjoyed a per capita net income increase from 1219 CNY to 3131 CNY (Fan, 2012). NGOs also provide a unique perspective to address poverty reduction in culturally diverse ethnic minority groups. NGOs' understanding of local knowledge systems, cultural values and traditional livelihoods compensate for the over-emphasis on economic development in government poverty alleviation policy.

The present understanding of disabled people in poverty is very limited, and specific policy measures are deficient. At present, China's rural areas still has more than 20 million disabled people in poverty. Due to the effects of their disabilities, low education levels, lack of skills, unequal opportunities and insufficient investment, the disabled are one of the most difficult sections of the community for poverty alleviation. Most Chinese NGOs working on the issue of disabled people in poverty concentrate on the disabled in urban areas, making their work centres on obstacle-free environment construction, restoration

of health, employment, etc. Therefore, support for poverty reduction to the rural disabled is one of the most important issues to address.

Challenges confronted

- The government's anti-poverty approaches lay particular emphasis on economic indicators. This approach to development which exploits natural resources and cheap labour is undoubtedly difficult to sustain.
- China's poverty reduction efforts are characterised by government-led large-scale projects, which reinforce community subjectivity, do not provide self-capability for the poor, and lack "participatory" and "endogenous" approaches to transformation.
- As an important force for poverty reduction, NGOs involved in the area of poverty alleviation work lack legal and the systemic guarantees, and their practical experiences from the community level are received within a narrow channel of national policy.
- Research dealing with policy and factors leading to poverty is relatively weak,

increasing the uncertainty of the results of anti-poverty efforts. Global changes, including free trade, have brought excessive and overly fast opening of markets, and the frequency of extreme weather events resulting from climate change in recent years have directly or indirectly increased the vulnerability of the poor groups. However until now research and policy measures designed to deal with these new challenges have been limited.

Policy recommendations

- 1) Strengthen understanding of complex poverty challenges and design multidimensional anti-poverty policies.
- 2) Further improve the poverty reduction efforts to particular vulnerable groups such as women, children, ethnic minorities and the disabled.
- 3) Expand the capacity of NGOs and poor communities themselves to be involved in the process and practice of poverty reduction.
- 4) Strengthen policy preparation for new causes of poverty such as trade liberalisation and climate change.

2.Sustainable consumption and production

Summary

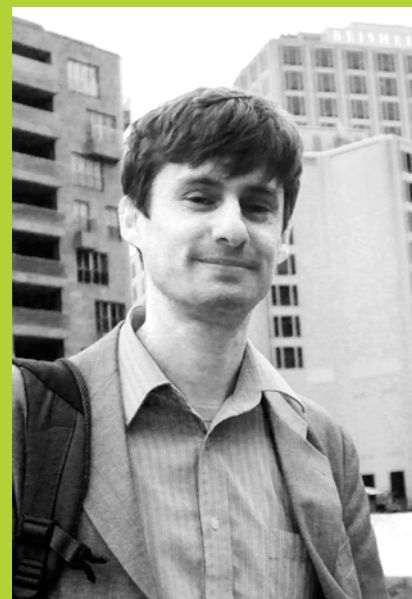
This chapter deals with China's rapidly changing consumption and production patterns that occurred from 1992-2011. Sustainable consumption and production (SCP) is a cross-cutting issue that takes a life cycle approach considering impacts caused along the value chain of goods and services from resource extraction to the end of life stage. SCP lies at the heart of sustainable development, not only for developed countries, but also for emerging economies like China.

Changes in China's consumption and production patterns from 1992-2012

Overall, China's resource consumption has increased dramatically over the last two decades driven mainly by China's rapid industrial growth. China's per capita ecological footprint increased from about 1.5 global ha/person in 1992 to 2.21 global ha/person (Ewing et al., 2010) while China's bio-capacity continued to declined. For example, China's water use has increased by 12.4 % between 2000 and 2010 (China Statistical Yearbook, 2011), mainly driven by water consumption from industry and mining activities. In terms of pollution, China's first official nationwide census of pollution sources issued in 2010 found that pollution levels are much higher than official government sources indicate: In 2007, industrial solid waste such as particles from mines or steel mills totalled 49.14 million tons, the amount of pollution discharged into water resources totalled 30.3 million metric tons and waste gas emissions topped 63.7 trillion cubic meters (Xinhua, 2010).

Along with the urbanisation process, China's has witnessed significant changes in food production and consumption systems. A sharp decline in arable land in the past 20 years has been observed. However, grain output increased from around 450 million tons in 1992 to around 550 million tons in 2010 due to the extensive use of chemical fertilisers which shows a rising trend from just under 30 million tons in 1992 to more than 55 million tons in 2010 (China Statistical Yearbook, 2011). Large-scale use of chemical fertilisers not only increases energy consumption but also has negative impacts through pollution of groundwater and soil compaction. In addition, as Chinese living standards improve and diets change, the consumption of high impact products such as meat, eggs, milk, aquatic products and seafood shows strong increases over the past 20 years.

China's private consumption trends have mostly not received much attention by policymakers or the public. Although ecological per capita footprints and carbon emissions, 5.8 tonnes CO₂/person (EIA, 2011), are still much lower than those of OECD countries, these figures hide the fact that China's rural population has much lower footprints and emissions than urban consumers. In terms of private household consumption, the gap between rural and urban incomes is also reflected in consumption patterns. Especially in urban areas the use of private motor vehicles and rising consumption of luxury products are major trends of unsustainable consumption patterns. In 2009 China surpassed the US



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Patrick Schroeder is dedicated to research on sustainable development and global environmental governance, and to promote exchange and cooperation between domestic and international NGOs on the issues of climate change. He has worked for a number of years in the field of international relations and environmental studies.



*A world without fear
where humanity lives
within its limits.*

-Patrick Schroeder

as largest car market and in 2010 China became the world's second largest luxury goods market.

Discussion and analysis of challenges and solutions for sustainable consumption and production in China

The main focus of China's environmental policy and efforts to clean up the environment over the last two decades has been on end of pipe solutions to reduce industrial pollution and resource consumption. While some success can

be seen in relative decoupling of some resources and economic growth, overall resource consumption will continue to increase strongly over the next decade, if no stronger counter measures are taken.

The Chinese government tries to address the issue of decreasing resource availability and increasing industrial waste through promoting resource efficiency, for example by way of the Circular Economy approach which aims at minimising industrial resource use and waste outputs by encouraging recycling and reuse. China currently has approximately 1,600 national and provincial-level industrial parks and since 2001 has established an eco-industrial park (EIP) network. It currently includes 15 national demonstration EIPs and 45 national trial EIPs. However, the lack of a practical quantitative standard system that can be used to more consistently and objectively accredit EIPs is a major barrier for further

development (Shi, Tian and Chen, 2012). The current number of genuine certified eco-industrial parks is therefore still too small, accounting for less than 0.5% of all industrial parks in China, to make a real positive impact on the whole industry. Most industrial parks in China still are consuming and wasting too many resources and are highly polluting.

In the coming decades China's domestic consumption will be responsible for a growing share of resource and energy consumption. Although reliable data is scarce, it is obvious that consumption patterns and ecological footprints of China's 200 million urban middle class consumers have already reached and in some cases surpassed OECD standards, whilst many of China's rural consumers are not consuming enough to meet their basic needs.

Innovative governance mechanisms are important to make progress towards sustainable consumption and production

patterns. This will be of particular importance as China tries to increase domestic consumption to reduce reliance on overseas export markets for future economic development. The Chinese government does try to address unsustainable consumption through top-down measures, such as the restriction on private car purchases and use in large cities like Beijing and Shanghai. The government's propaganda-style public awareness raising initiatives are, however, less successful and do not have much appeal to the younger generation consumers. The slow uptake of energy efficient household appliances and 'green' products is both a result of low awareness among consumers and lack of trust in existing product labelling systems and product standards.

To find solutions and enable sustainable consumption and production for both urban and rural consumers, not only strong policy signals but also innovative bottom-up civil society campaigns will be necessary. Some Chinese civil society initiatives promoting sustainable urban commuting and low-carbon lifestyles try to address these issues. Examples are the Green Commuting Network established by the China Association for NGO Cooperation (CANGO) and the Environmental Defense Fund in more than twenty cities across China. The Institute for Public and Environmental Affairs (IPE) and the Green Choice Alliance, a network of more than 30 environmental Chinese NGOs, looks upstream in the global electronics supply chain of multi-nationals such as Apple (Friends of Nature, IPE, Green Beagle, 2011) and tries to influence companies, policymakers and consumers by making information and data about polluting companies publicly available.

Challenges for NGOs in promoting SCP include effectively engaging companies, reaching out to a wider public audience and the limited political space provided by current regulations.

China's consumption and production patterns in the global context

In the 1990s, China started to become a "world factory" with most of the consumers of goods produced in China located in the United States, Europe and other developed countries. In 2012, China's world factory status has not changed, but it now also is a "world consumption hub", particularly in China's urban centres. On the one hand this new development of China's domestic national consumption increases growth of the global economy and contributes to balancing international trade. On the other hand it increases material and resource consumption which are cause of further pressures on the environment and ecosystems. Moreover, in order to meet the growing domestic demand, China will increasingly rely on the resources imported from abroad, including grain, coal, oil and timber.

International cooperation is necessary to promote sustainable production and consumption patterns in China. For the promotion of cleaner production practices, transfer of technology and mechanisms for energy and resource savings are necessary. For the promotion of sustainable consumption patterns, not only in China but even more so in the developed countries, dialogues and exchanges about lifestyles, happiness, fair shares and social values will become increasingly important.

Policy recommendations

- 1) Strongly enforce cleaner production and circular economy laws and regulations, particularly at the local level. Introduce practical approaches based on life cycle thinking among resource intensive industries.
- 2) Improve and enforce standards of household appliances and green products, improve transparency and reliability of product labels and information systems, promote the uptake of less environmentally harmful and energy efficient products
- 3) Policies need to focus on the whole life cycle of goods and services. Life cycle assessments need to be adopted in product design. Furthermore, the end of life stage of products needs to receive stronger focus, particular new products such as compact fluorescent lamps which contain heavy metals.
- 4) More space for civil society initiatives to work directly with consumers for sustainable lifestyle and sustainable consumption choices is necessary. Also, civil society needs more space to act as watchdog on polluting industries and make this information available to consumers so that consumers can use their purchasing power effectively to influence corporate behaviour.
- 5) Promote innovation and business models that enable sustainable lifestyle choices, for example through product-service systems. The bike sharing system of Hangzhou city is a successful example of such a business model.
- 6) More funding for research on consumption behaviour and attitudes of Chinese consumers is necessary to design effective interventions for sustainable lifestyles.

3.Public health

Summary

Health is a fundamental human right. The purpose of public health work is to ensure that every member of society can enjoy a healthy life. Since China's reform and opening up, the Chinese government has gradually begun to pay attention to public health and has made a number of health system reforms. Since SARS, the government has strengthened the development of the disease control system, and has made progress in dealing with infectious diseases such as AIDS. However, there are still great threats and challenges that China faces in guaranteeing universal access to basic health services, reducing the civil burden of disease, and dealing with issues in food and drug safety, and health issues caused by pollution.

Ensure everybody can enjoy fundamental health care and medical services
In order for the more than 1.3 billion people in China to access basic medical care and health, the Chinese government launched the latest round of medical health system reforms in April 2009. Five major reform programs include: 1) accelerate the establishment of the basic health insurance system; 2) preliminary establish a national system for basic pharmaceuticals; 3) improve the community-level medical and health care service system; 4) gradually work towards equalisation of basic public health services; and 5) push forward with pilot projects for public hospital reform.

These measures are aimed at solving the difficulties and expense of seeing doctors brought on by over-marketisation of reforms. The new reforms promise to strengthen government's responsibility in the provision of basic medical and health care, both to consistently increase funding, and maintain social equality and justice. However so far, the principle issues involved in medical reform are still unresolved. As the Minister of Health, Dr. Chen Zhu has said, "even as the issue of health reform enters deeper waters, we will continue to pursue our goals for health reform".

Disease control and HIV/AIDS prevention and care

In addition to linking three key services (health insurance, basic pharmaceuticals and medical care), with the goal of guaranteeing universal access to basic health services, public health work also includes the prevention and control of major diseases, including infectious diseases, chronic non-communicable diseases, occupational diseases; elderly health and mental health, etc.

In its response to endemic and infectious diseases over the past two decades, China has made significant achievements. HIV/AIDS prevention and control has in particular provided opportunities, experience, and lessons for the prevention and control of other diseases. However, along with social, economic, and environmental changes,

Everyone can live in a society of equality and respect

-CAI Lingping

the patterns of disease in China are changing at the same time. Chronic diseases have become the number one health threat in China, and have further increased the economic burden on the state. For example, chronic diseases occupy 68.6% of the total disease burden. This requires dedicated public health promotion characterised by prevention, and emphasising health promotion and health education in order to reduce the disease burden, and to promote successful health reform. However, chronic disease prevention has not yet attracted adequate attention from government, citizens, or civil society.

New Public Health Issues and Crises

In China, along with the development of the economy and industrialisation, the endangerment to health caused by food and drug safety concerns, as well as by the destruction of the environment, has set off a range of serious social concerns. In a speech in 2012 declaring the government's stance, Premier Wen Jiabao stated that, "we absolutely will not

sacrifice the environment and the health of the people for economic growth!" Although both the government and public are highly concerned about food and drug safety issues and problems with environmental health, and many relevant laws and systems have been put in place, these crises have not yet diminished.

Diverse Voices – NGO Participation in Public Health

Public health is a public affair. It is an area that citizens should be involved in. Within HIV/AIDS control and prevention, the work carried out by civil society organisations (CSOs) plays a large role in covering areas such as health education, treatment, care, and policy advocacy. It is worth noting that due to integration with the international agenda, and guaranteed under the principles and mechanisms for participation in policy decision-making by Greater Involvement of People Living with HIV/AIDS (GIPA) and Community Based Organisations (CBOs), the relevant departments of the government have begun to deal with the issue of registering NGOs. Government purchasing services of CSOs and building communication mechanisms with CSOs are gradually being established.

Policy recommendations

1) The government should take a people-oriented approach when making policy decisions. Attention should be given to the requirements of vulnerable groups. Only then are urban and rural residents

alike guaranteed a health care and social security system from which they can receive basic health services.

2) Avoid excessive investment in medical treatment at the cost of health education, and lower the heavy burden on medical treatment through diverse disease prevention measures.

3) Promote changes in mechanisms and organisations. This includes pushing for coordination among the various government departments that are involved in health; the formulation of a rational arrangement of health departments; and establishing and encouraging mechanisms for CSO participation.

4) Invest more funds in food safety, environment protection, and health. Supervision of pollution and harmful businesses should be increased, providing security for healthy livelihoods.

In conclusion, economic development is not worth sacrificing the health of citizens. The goal of an effective health system is to help people benefit from development. Whether or not we can realise the enjoyment of health services for everyone does not depend on discussions of market mechanisms or free government programs, or on reform measures. Rather, it depends on whether or not the government puts the interests of citizens first and can put forward brave and concrete actions that can implement comprehensive structural reform from the highest levels.



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CAI Lingping has 10 years ngo working experience, focus on public health and development of civil society, and promoting multidisciplinary and multisectoral collaboration on health issues.



Chapter 3

Environment and Resources

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Summary

Climate change presents a huge challenge for the international community. Over the past twenty years China has been made significant efforts in dealing with climate change, including through international engagement and developing a Chinese model for low-carbon economic development. However, China still faces significant challenges in reducing poverty during the ongoing process of rapid urbanisation. 100 million people remain living under the poverty line in China. The government should actively pursue sustainable development, helping to limit the negative impacts of climate change. However, achieving reductions in emissions will challenge the political will and foresight of China's leaders. Meanwhile, the private sector and the general public also face challenges in terms of both responsibility and action.

China's model of sustainable development should balance efficiency and fairness so as to meet both social and environmental needs. To do this, it needs to adhere to the following principles:

- Development should be fair and protect rights;
- Low-carbon economic development

Human beings and nature co-existence in harmony.

-HOU Yanli

should be in line with both efficiency of production as well as fairness;

- The government must continue to take a leading role as market mechanisms still need further improvement;
- Close coordination between local and national authorities for the implementation of national objectives;
- Maximise private sector capacity for emissions reduction;
- Improvement of carbon emissions data and develop consciousness and exposure to carbon accounting information;
- Address the significant carbon emissions embedded in Chinese exports;
- Transition to a low-carbon economic model needs further investment in technology and financial support;
- Public campaigns to promote low-carbon lifestyles.

The Chinese Government will face serious challenges in reducing carbon emission given that China became the highest emitting country in about 2006. The Government's mission in its 12th 5 Year Plan includes a focus on transitioning

away from the current model of economic development so as to save resources and balance growth with social and environmental needs.

The interplay between central and local authorities in relation to prioritisation of GDP continues. China's national GDP target for the current Five Year Plan is set at 7.5%. However, local government will continue to work hard to exceed this figure, increasing the likelihood that emissions targets will also be exceeded. The perception that performance is assessed against GDP growth makes it difficult for the central government to achieve a real shift in this regard.

During the period of the 12th Five Year Plan, China plans to keep total energy consumption within 4.1 billion tons of standard coal equivalent (tce). However, according to provincial economic development plans, it is predicted that average consumption will raise to 4.35 bn tce, 0.25 bn tons higher than the objective issued by NDRC.

1. Climate change

Policy recommendations

China's governance and development has implications for the international environment as well as for development processes around the world. How to deliver an adequate domestic response, as well as to engage in international cooperation dealing with climate change will be a key challenge for the Chinese government. Policy advice is summarised below:

1) The government needs to take difficult decisions, especially to address the timing of a peaking in China's carbon emission.

According to analysis by Tsinghua University, as well as by other research institutes, China's carbon emissions will peak around 2030. However according to NDRC's Energy Research Institute, China's carbon emissions should peak before 2025 if the global target of 2 degrees warming is to be achieved. This conclusion means that carbon emission reduction should be around 49%-59%, higher than the existing official targets. (Jiang Kejun, 2011) Addressing the peaking issue early will help China to develop its strategic economic plan, achieving sustainable development at comparative lower cost.

2) Speed up the development of climate change legislation

Draft climate change legislation is under preparation by the National Development and Reform Commission, in line with advice collected from experts and the public. This should proceed quickly.

3) Mid- and long-term emissions reduction plans for cities

City-level economic development plans need to set mid- and long-term carbon emissions objectives so as to promote local effort.

4) Reform taxation and financial incentives

A carbon tax would be effective in constraining coal use. The Chinese government should implement an emissions charge system and resources tax as soon as possible.

5) Enhance international cooperation and actively engage in international climate change negotiations

China needs to work with the international community to encourage progress in the climate change negotiations.

As a developing country, China has an important role to play in the international transition toward low-carbon development. China should cooperate with other developing countries and enhance the funds and technology available to the least developed countries facilitating progress in future international climate change negotiations.

China must transition its role from a focus purely on economic development to become an actor which will affect the global effort to deal with climate change. China is currently in an embarrassing situation and needs to reset its position on climate change both at the national and international level.

HOU Yanli

Independent Consultant



Yanli worked with the WWF Beijing Office from October 2008 to December 2011. She has led the Climate and Energy Program, WWF China since March 2010. Before that, she led the Global Climate Initiative China Program, with a focus on China's better position in the international climate negotiations. Yanli has over 10 years working experience in the energy efficiency and climate change area including a secondment to the International Energy Agency (IEA) in Paris in 2006. During 2001-2008, Yanli worked with the Energy Foundation Beijing Office, focusing on energy efficiency development of industrial and building sectors, climate change and local implementation of 20% energy saving program in China.

2. Land use and planning

Summary

Land resources are essential to human survival and social and economic development. Public policy on land use and planning is of vital interest to society as a whole, and needs to protect the natural environment while safeguarding social equity, and meeting the needs of economic development. China has experienced significant change in land use and planning over the last twenty years. Tremendous changes have taken place in its urban and rural areas, reflected in the sprawl of urban and industrial zones, farmland lost and landscape change, conservation areas growing steadily, and Recreational Belt Around Metropolis (ReBAM) programmes emerging.

There have been both positive and negative sides to the changes in Chinese land use and planning, both of which are worth considering. On the positive side, land use and planning have contributed to fast growth of urbanisation and industrialisation, meeting the need for urban people's having leisure activities in ReBAM, increasing resources for the provision of urban infrastructure, improved rationalisation of land use and increased land value. On the negative side, problems such as loss of social equity, socioeconomic conflicts, loss of arable land and protected land, and damage of cultural heritage have emerged. It is urgent to change course

*I want a future where
a healthy, happy and
peaceful life is possible.*

-DENG Bing

in order to alleviate or avoid detrimental impacts on the economy, society and environment.

There are many reasons that have led to the current situation, including economic development, technological progress, change in societal attitudes, and most importantly changes in land-use policy. Under current land-policy, local government finances are heavily dependent on land revenue (referred to as 'land finance'). Land sales by China's local governments generated 3 trillion Yuan (\$439 billion) in 2010, up more than 88% from a year earlier, and representing over 74% per cent of all local government revenue (Liu, 2011; Guan and Peng, 2011). In addition, local government obtained loans by land mortgage. According to official statistics (National Audit Office of the people's Republic of China, 2011), at the end of 2010 the debts of local government financing platforms were 10.7 trillion Yuan (\$1.68 trillion) with the loans guaranteed by the expected returns from land sales. Some scholars believe that the debts of local government

are actually much higher than official statistics.

The essence of 'land finance' is sacrificing the social profit of the future often to make shortsighted developments. Local governments are heavily dependent on land finance, so they often do not adequately balance the interests of stakeholders and ultimately intensify conflicts between social, economic and environmental factors.

There are a number of important issues and challenges that China's authorities need to deal with. The first challenge is related to inconsistency and/or conflicts between land regulations and/or policies. The second challenge is how to balance the demand for land due to rapid economic growth with social equity. The third challenge is how to build a coordinated land-use system between urban and rural areas. The last important challenge is how to improve public participation.

China's land-use issues relate to land system reform, economic development, livelihood development, ecological security and improvements of the legal system. Moreover, with deeper globalisation, and wider international collaboration, land use issues that influence the stability of one-fifth of the world's population, also relate to global affairs such as the foreign

investments, import and export trade of building materials, and control of carbon emissions. As the fourth largest country by area, China must take responsibility of removing dependence on 'land finance' and finding solutions to sustainable land-use.

Policy recommendations

- 1) Improve the legal system, promote thorough reform of the current land requisition system, and establish authoritative land-use planning considering the varying objectives of economy, society and environment.
- 2) Accelerate the process of urban and rural collective development, establish mechanisms for rural land market access, narrow the gap between urban and rural areas;
- 3) Improve the land compensation system to protect the legitimate rights and interests of individuals.
- 4) Provide an effective mechanism for the public to participate in land-use and planning decision.

*I want a future where
landscapes, agriculture
and communities
coexist in harmony.*

-FAN Mingxiao



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Deng Bing works in the field of urban & rural planning and tourism planning, with a focus on communities and tourism development.

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3. Combating desertification



WANG Shuwen

Deputy Secretary General

Society of Entrepreneurs & Ecology

Wang Shuwen is committed to desertification control through community-based research and practice, with a particular focus on sustainable use of irrigation and pasture protection in desertified areas. Wang is also responsible for SEE's strategic management and project monitoring and evaluation work.

Summary

China has consistently attached great importance to combating desertification, and has made significant progress in recent decades, especially through the initiation of the 'Northern China Shelter-belts Projects' in 1978, the 'Desertification Control Project' in 1991, and the 'Beijing-Tianjin Sandstorm Control Project' in 2001 (Wang, 2009).

While there have improvements at the local level in some areas, the overall situation is still deteriorating, despite massive government investment in the last two decades. There is as yet no effective control strategy formulated, and government dominates almost all activities to control desertification including finance and policy-making. Command and control is the major policy approach, and there is a lack of market-based as well as voluntary and participatory instruments. (Shen, 2006)

Government tends to take one-size-fits-all approach to controlling grassland desertification. For example, the establishment of a household contract responsibility system has previously proved extremely successful in agricultural regions, but has not worked well when extended to pastoral regions. Government also prefers to take direct control of policy execution and enforcement, such as grazing bans, collective forest tenure reformat, pasture enclosure and resettlement

*Enjoy nature and
protect nature.*

-WANG Shuwen

and so on. Longstanding harmonious relationships between people, livestock and grasslands have broken down due to human interventions. Some of these policies not only result in failure to restore and protect the ecosystem, but also cause many problems where indigenous cultures are severely affected. These issues have led to serious reflection on the part of both government and civil society. (Wang, 2009)

In the early 1990s, some individuals who believed that man could triumph over nature dedicated themselves and their entire families to combating desertification by afforestation through volunteerism and heroism, which provoked public attention and inspired more people to act. Later, scholars interested in grasslands, desertification and nomadic cultures began to discuss and debate the policies and actions described above. At the same time they attached great importance to property rights over natural resources and civic actions gradually received increased attention (Li, 2009; Da Lintai, 2005). As a result of these developments, the importance of participation of



local communities gained recognition, symbolised by the foundation of SEE comprising outstanding Chinese entrepreneurs taking on ecological and social responsibilities, believing that local communities have the ability to protect their environment if they have the knowledge and power to make decisions for themselves. By uniting entrepreneurship and civil society, they try to take a lead and guide the response to desertification collectively and effectively. Recently, practices tend to be more market-based as individuals and enterprises have made serious efforts to explore how to combat desertification. These attempts seek to achieve economic sustainability of desertification control through commercial models.

This report conducted an analysis of the achievements and challenges in fighting desertification, as well as appraisal of

the efforts of civil society in response to grassland desertification in last twenty years. It is the view of this report that grassland desertification and land degradation is exacerbated by both climate change and human activities in arid and semi-arid areas. However the problems are complex and systematic, with social, economic and environmental factors interweaving with each other. Due the complex and uncertain nature of the problem, awareness and responses have varied over time, with equally varying outcomes, impacts and achievement of sustainability. The experience of desertification control in China over the past twenty years demonstrates that it is a constant and ongoing process of learning, action, reflection and adjustment.

Policy recommendations

In the context of ongoing urbanisation

and industrialisation, this report recommends:

- 1) Transform the present government-dominated model to a more participatory and market-based approach, which can motivate and mobilise diverse actors and resources, especially securing the rights of actors who are working to solve the problem and establish an effective ecological compensation mechanism;
- 2) Insist on efforts to combat desertification being informed by science, respecting environmental limits, combining natural restoration and human intervention, and technological innovation;
- 3) Promote creative use of the sand industry, focus on increasing income of local communities, and realise the coordinated development of both economies and the environment.

4. Forest protection: the practice of community forestry

Summary

Community forestry is a new trend in contemporary forestry management, and is attracting wide attention throughout the international community as a model for sustainable forest management. This chapter reviews the achievements of rapid development in Chinese forestry development and management, and reviews the impact of community forestry practices on sustainable development in China through interviews with a range of stakeholders. Community forestry inherits much from traditional forestry, but goes beyond this to promote innovation of vision, management mechanisms, use of technology, and has become a substantive approach to drive the development of sustainable forestry. We also provide analysis of the problems and challenges to community forestry from a global perspective and provide policy suggestions according to the current situation.

Achievements

Since 1992 and the initial Rio conference, China has placed a high priority on domestic forest protection. Since that time in line with the UN declarations, China has implemented six domestic forestry programs, including the 'Natural Forest Protection Program', the 'Northern Region and Yangtze River Watershed Forest Protection Program, the 'Grain to Green' Program, an anti-desertification program for the Beijing and Tianjin region', a programme of wildlife protection and nature reserve

Harmonious interaction between human and nature.

- GAN Tingyu

establishment, and a regionally-focused forest plantation program. China has also begun a program of tenure reform for collective forest land. These efforts have all been highly successful. The seventh National Forest Inventory, which concluded in November 2009, indicated that the total forest area of China is 195 million ha, implying a national forest coverage rate of 20.36%, with the total volume of forest stock estimated at 13.72 billion m³. Plantation forest is estimated to cover 62 million ha. and contain forest stock of 1.96 billion m³. The total area and volume of forest in China measured in the latest survey represents increases of 46.2% and 35.4%, respectively, over the findings of the fourth National Forest Survey (1989-1993).

Practice

China has one of the largest agricultural economies in the world, and more than 60% of forest land is owned at the local rural village level. As a result, community-based management plays a crucial role for forest management and ecosystem restoration in China.

In the early 1990s, China began to

establish pilot community forestry projects within larger national forestry programmes. As key forest programmes have progressed, community forestry projects have moved from the initial pilot phase to an outreach phase during which they received foreign aid, and then developed further to be made part of larger domestic projects. During this process, the concept of community forestry gained recognition and became more widely implemented. At the same time, a standard pattern of community education, training, implementation, monitoring, evaluation and promotion has evolved. The process helps communities transition from traditional to modern forestry practices, and also encourages farmers to participate actively in forestry planning. A number of scholars and practitioners have conducted both theoretical and applied research into integrating local patterns of forestry, community relations, and tenure ownership according to local situations. This has helped to localise community forestry and form a solid foundation for long-term development of community forestry in China.

Experience in China has indicated that community forestry's emphasis on people represents the chief difference between community forestry and traditional forestry. Community forestry adopts both sustainable use of forests and sustainable development of the rural community as its goals, allowing communities to engage

**TANG Caifu**

Consultant

ShanShui Conservation Center

Tang Caifu is actively engaged in forestry technology and forestry project management, and is committed to the research of community forestry development and forest carbon sinks. Tang has been involved in key forest protection projects such as the Yangtze River Forest, Natural Forest Protection program and Grain to Green. Tang has a wealth of experience in the practice of community forestry projects, development of afforestation and reforestation projects under the Clean Development Mechanism and management of the China-EU Biodiversity Project.

**WANG Xiaoyan**

Postgraduate Student

The Institute for Rural Development, Sichuan Academy of Social Sciences

Brief introduction: Wang Xiaoyan is a postgraduate student at Sichuan Academy of Social Science, in the research program “Agricultural Economic Management”. Her research topic is rural community development. Over the past two years, she has participated in several national and provincial level research projects on rural community development and agricultural economics amongst others.

**GAN Tingyu**

Deputy Director

The Institute for Rural Development, Sichuan Academy of Social Sciences

Gan Tingyu has worked for a long period in the field of utilization and management of natural resources as well as rural development. She has conducted significant research and consultation in these fields.



in forest-related activity while also allowing for improvement in the natural environment; it generates benefits from both community development and biodiversity protection; it enhances local participation, making villagers the masters of their forest industry; it adopts an integrated top-down and bottom-up decision-making process, giving farmers the right to speak in the planning, operation, and evaluation of forest management; local expertise is respected and utilised; and a sense of empowerment in the local community is cultivated. Community forestry has helped change the emphasis of forestry from the straightforward production of timber to maintenance of the ecosystem, and helped it become a community, rather than government, enterprise.

With initial help from international and domestic partnerships, the concept of community forestry and management was implemented in several of the national-level forestry programmes mentioned above, as well as in other poverty alleviation projects. The implementation of Participatory Rural Appraisal (PRA), participatory planning and design, village collective sustainable management, farmer field schools and

*Protect natural beauty,
and provide for social
harmony and people's
well-being.*

-TANG Caifu

other such methods, have produced innovations in the conceptual framework, administration, and technology used in community forestry. They have led people to re-evaluate traditional forestry, and have gradually won recognition for the participatory model, encouraging both cadres and villagers to develop their ideas and introduce them into government administration. The participatory model has helped government officials and cadres begin the transformation from issuing orders to serving communities, and helps build local capacity. This increases cooperation among stakeholders, and increases the confidence and cohesiveness of the local community. Community forestry speeds social reform and economic reform, and helps work towards sustainable development in the forestry sector.

Challenges

China has achieved remarkable results in its twenty years of experience with community forestry. Community forestry has developed, however, mainly through promotion by international and NGOs; it is not yet common practice and still faces many obstacles and challenges. As a forestry management model which involves villagers in forestry production, operation and management, community forestry should play much more of a role in achieving China's goals for increasing woodland cover, improving forest quality, and increasing the amount of carbon stored by forests. China's forest resources are scarce and unevenly distributed, and there are still acute contradictions between resource protection and rural socio-economic development. With a new wave of stakeholders entering rural communities such as urban capital, community forestry should focus on an economically sustainable model for forest management. In particular, collective tenure reform distributed property to households, resulting in smaller and more fragmented forestry management, establishing potential divisions between property owners, and bringing new challenges for the future organisation of community forestry.

Policy Recommendations

Community forestry is a core component of sustainable forest development, on which a system of forest ecology, forest industry and forest ecological culture can be built. Community forestry can facilitate the ecological, economic, social, carbon-storage and cultural functions of the forest. The development

In the future, I hope to see development not only for the economy, but also for humanity and society

-WANG Xiaoyan

of community forestry should take the context of Chinese forestry in to account, and promote community forestry to become mainstream practice.

In order to achieve this, we provide the following recommendations:

- 1) Integrate community forestry into the overall strategy of rural sustainable development. Include proper environmental and cultural standards into community forest resource planning and operational management. Through the development of community forestry, develop and implement picture blueprint for productivity, ecological protection and better standards of living in rural areas
- 2) Provide incentives to engage the local community and cultivate a sense of ownership of the forest. Government intervention should be reduced, and the local community should be empowered – communities should have more opportunities to manage local natural resources.
- 3) Enhance the management of community forestry. A well-organised

and integrated management model should be devised to create a channel for community participation, and promote democratic consciousness, fairness, and the capacity to engage in scientific decision-making.

- 4) Improve the conditions for the adoption of community forestry. Woodland and timber should be exchangeable, selective felling of wood should be promoted, forest rights should be transferrable, and insurance schemes and other complementary reforms should be established. Mechanisms for forest ecological service compensation and comprehensive forestry regulations should also be developed to guarantee that communities receive the benefits to which they are entitled.

- 5) Improve support for community forestry including the provision of social services. Faced with collective tenure reform that will allocate forests among individual households, households will find their potential output will actually decrease, and their ability to market goods will face serious and even insurmountable difficulties. New social service organisations should be created, and support should be extended to villagers who establish new cooperatives, industry associations, and intermediary services in order to assist the organisation of forest resource administration.

- 6) Emphasise community forestry promotion and capacity building. More people should recognise and understand the concept of community forestry so that its application can be expanded.

5. Nature reserves

Summary

Nature reserves in particular, serve multiple roles in modern societies, balancing social, cultural and economic development activities with the protection and resilience of natural ecosystems. Between 1992 and 2011, China's GDP grew at an average rate of over 8% per year. At the beginning of this period it was clear that biodiversity conservation and the national program of reserve development would face a grim set of challenges. In order to implement its commitment to Agenda 21, the Chinese government in 1994 formulated its Agenda 21 White Paper, which included goals on biodiversity conservation and reserve development. The result has been that over the past twenty years, China's nature reserve development has made remarkable progress. The role that China's nature reserves have played in releasing pressure from rapid economic development on biodiversity and environmental conservation is unarguable and hard to overestimate; the reserves have maintained the ecological security of China, of the region and internationally.

The number and area of reserves in China increased several-fold during the period 1992-2011. By the end of 2009, China had established 2541 reserves (as opposed to 708 in 1991), covering a total land area of 147.7 million hm² (56.6 million hm² in 1991) and accounting for 15.39% of China's total land area. The best current estimates are that protected areas of various designations in China today account for over 18% of the national land area.

Ensure ecological safety, beauty of the natural environment, social stability, harmony and happiness.

-ZHANG Liming

The administration of nature reserves has also been improved. The Ministry of Environmental Protection has established a system for integrated management between ministries with jurisdiction over various reserves. The funds for nature reserve management are sourced both from central and local government and have increased; international cooperation has been enhanced; and stakeholders have been encouraged to participate in dialogue over the development of reserves. Private entrepreneurs and social enterprises have also participated in the development of reserves in a number of cases.

Of course, there remain numerous problems with nature reserves in China, including poor definition of boundaries, unclear surveying of natural resources, inefficient management, and a lack of systems to evaluate and improve management.

Stakeholder views

Through interviews with management authorities, academic institutions, NGOs, ecotourism operators and media, we have found both agreement and disagreement.

- While conservation areas, have experienced tremendous growth both in numbers and area covered, more efforts should be invested on enhancing management in the future.
- The government has been increasing its financing for conservation areas, but the current level of investment is far from enough.
- In general, the management of conservation areas is unsatisfactory. National level natural reserves are better off, while the rest lag far behind.
- International organisations such as WWF, Conservation International and The Nature Conservancy, have been working on the development of China's nature reserves. However, there are very few Chinese NGOs involved in this area. Shan Shui Conservation Centre is an exception in this regard, however few other Chinese NGOs have a long-term strategy related to the development of nature reserves.
- There is significant room for increased public involvement, especially from communities living adjacent to conservation areas, in conservation and reserve management.

Main issues of concern

- An unevenly distributed system of protected areas, with only 13% having clearly defined boundaries (Peking University and Shan Shui Conservation

Centre, 2010);

- Economic development such as tourism, energy and mining projects as well as roads, are now putting unprecedented pressure on conservation areas;
- Due to concerns that natural reserves hinder local economies, local governments have much less enthusiasm in nominating areas (such nomination has led to the majority of existing nature reserves). Many local authorities also want to downgrade nature reserves to make way for development projects.
- Lack of a mechanism for the public to be involved in conservation area development. The public does not have an accessible and well-informed channel for participation.
- The public has little knowledge of what conservation areas in China have achieved. There is also no evaluation system to assess the effectiveness of conservation areas themselves.
- There is a huge gap in finance for nature reserves. Central government finance is available only to national-level reserves. Provincial/municipal/prefecture/county-level finance is very limited or inaccessible. Laws and policies to enable channelling of public donations are only at the research stage.
- At the national level, a systemic and coordinated approach to design of conservation areas is lacking. Conservation areas need to be included into the government's strategic thinking.

Policy recommendations

This report provides the following suggestions for the future of reserves in China:

- 1) An independent commission should draft a new system for conservation area planning and management, based on a survey of all existing protected areas.
- 2) Nature reserve management should be regulated, with emphasis placed on quality rather than quantity.
- 3) A platform should be established that allows society to participate in the development of reserves.
- 4) An incentive mechanism, such as preferential tax treatment, should be established to encourage participation by enterprises in nature reserve development and similar public services.
- 5) A system should be established to encourage local enterprises and NGOs to explore new models of reserve development with government sanction.
- 6) 'Ecological compensation' and similar government subsidies should be researched and implemented to encourage both local communities and governments to be involved in ensuring the successful implementation of national plans for restoring or improving ecological function.
- 7) Achievements in reserve development should be promoted and advertised to ensure there is broad understanding of, and support for, reserve development efforts.



ZHANG Liming

Senior Engineer

Sichuan Wildlife Conservation Association

Zhang Liming is committed to research in the fields of biodiversity conservation, sustainable eco-tourism and regional development. Zhang aims to bring attention to these issues and promote exchange and cooperation between all levels of government and domestic and international NGOs in the field of biodiversity conservation.

6. Biodiversity



ZHU Ziyun

Major in Lifescience, Yuanpei College, Peking University

Peking University Center for Nature and Society.

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Summary

China has some of the richest biodiversity in the world, but due to habitat loss or degradation caused by the pressure of population and development, hunting and trade of wild animals and plants, as well as climate change, China's biodiversity is seriously threatened. Signing the "Convention on Biological Diversity" in 1992 was a symbolic act demonstrating that biodiversity conservation is considered important by the Chinese government. From that point, central and local government, research institutions and NGOs have all participated actively in conservation of China's biological biodiversity. A series of related programmes were begun, and China's conservation actions also attracted much international support.

Within the three levels of biodiversity (genetic, species and ecosystem), species diversity is particularly important, because its presence can to a great extent ensure the existence of genetic diversity and ecosystem diversity. Therefore, species conservation is often viewed as the entry point to biodiversity conservation.

The giant panda, as the symbolic flagship species for biodiversity conservation of China and even the world, receives extra attention from both China and abroad. In order to provide the opportunity for the panda to continue to survive, China has established thirteen nature reserves, allowing habitat destruction and poaching of pandas to be controlled

successfully. The Giant Panda Breeding Centre was built in Wolong, Sichuan Province, and successful artificial breeding of giant pandas has been carried out there. These conservation measures have improved the situation for the panda. According to the results of the third giant panda population survey (1999-2004), the number of wild giant pandas was 1596, with 161 in captivity, representing slow growth. At the same time, because of long-term research, scientific knowledge of the panda has also increased. Compared with other species, giant panda conservation receives much more capital and resources. However, the biggest problem plaguing panda protection remains a shortage and uneven distribution of resources for habitat preservation. The project of artificial breeding of giant pandas has received relatively more support. Insufficient investment in habitat protection means that nearly 50% of the giant panda population is not covered by existing nature reserves, and human activities are still dividing the panda habitat. Habitat fragmentation has become the primary factor threatening the panda's survival, and has resulted in the segregation of the wild population. The crisis situation for the giant panda, therefore, has not disappeared. It is well accepted that the protection of whole ecosystems should be considered more valuable and important than the protection of a single species. However, overvaluing artificial breeding and neglecting habitat and ecosystem protection is a common

tendency of conservation work in China, greatly impacting the effectiveness of species conservation.

Lack of habitat protection for aquatic life in China presents a serious threat to survival of species. Due to the development of fisheries and busy shipping along the Yangtze River, the construction of the Gezhouba Dam, the Three Gorges and other large-scale water conservancy projects, one unique rare aquatic mammal - the Yangtze River dolphin's living environment is deteriorating, and the dolphin was declared to be in functional extinction in 2007. Hydropower development is considered an important source of clean energy to address China's power shortfall, and local governments are also able to obtain economic benefits. However the impacts of the construction of dams on ecosystems are often ignored, leading to efforts from Chinese civil society organisations to reassess these developments. In 2003, the National Development and Reform Commission considered and adopted a report proposing hydropower development for the middle and lower reaches of the Nu River, attracting criticism and questioning from non-government environmental protection organisations at home and abroad. In 2004, after careful study and scientific advice, Premier Wen Jiabao instructed that hydropower development on the Nu River be halted. The "Nujiang hydropower struggle" is often considered a milestone, and the first major victory for Chinese environmental non-

government organisations. Compared with the power and influence behind major water infrastructure projects, voices in support of environmental protection are still very weak. If the value and functionality of ecosystems are fully understood and quantified, it may be possible to arrive at a reasonable solution to this problem.

In addition, the resources dedicated to the protection of species other than the giant panda is very limited, directly affecting the effectiveness of scientific research and nature reserves. While the Tibetan antelope receives a great deal of attention at home and abroad, as well as investment from the public and private sectors to actively protect the species, knowledge of the exact population size, behaviour, and other basic biological information is still extremely limited. authorities responsible for protected areas number less than 50 people, making it difficult to implement effective management of the Hoh Xil Nature Reserve, with an area of 45,000 km².

Biodiversity conservation rules and regulations in China are far from perfect. Conservation of biodiversity is reflected in a number of laws and regulations, but the lack of comprehensive and specific biodiversity conservation and management regulations which provide protection is lacking. There is fragmentation of responsibilities between the Department of Environmental Protection, Ministry of Agriculture and the Forestry

A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.

-Aldo Leopold, quote by ZHU Ziyun

Administration, as well as a lack of leadership from the coordinating Agency for National Biodiversity Conservation. Many protection policies lack comprehensive consideration of various factors. In the area surrounding Qinghai Lake, pasture tenure has been implemented and fences constructed to delineate pasture, was done with the original intention to mobilise pastoralists to prevent overgrazing and protect grassland. However, the fences have become a threat to the survival of the rare Przewalski's gazelle, many of which have been fatally wounded while crossing the fences.

In 2011, an experimental ecological protection zone was established in the 'Three Rivers' source area, aimed at providing more comprehensive protection. The central government



and many local governments have begun to implement ecological compensation. Civil society organisations also began to mobilise and bring into play the protection of cultural traditions and local knowledge, to encourage local residents to actively participate in ecological protection work. Cultural traditions and beliefs synergetic with biodiversity conservation, such as residents of the Tibetan Plateau with a cultural aversion to killing of animals, have helped greatly in the protection of local biodiversity in the Kailash-Manasarovar region.

In short, the period 1992- 2011 has seen some initial achievements in biodiversity conservation, but the deterioration of biodiversity as a whole means that local improvements are overwhelmed by the larger trend. At this stage the assessment of biodiversity conservation is complicated by the fact that the pros and cons of many current policies still need time before they become clear. Conservation of biodiversity is

comprehensive work which requires participation and support from all stakeholders. The heightened awareness of biodiversity within both government and the public over the past twenty years will help to increase the effectiveness of conservation. Conservation practices at home and abroad show that successful conservation cannot be separated from civil participation, in particular that of local residents.

Policy recommendations

The effect of biodiversity conservation in China has worldwide significance, so further measures need to be taken in order to fulfil international responsibilities. Apart from increasing investment in biodiversity conservation efforts, the following measures should be taken:

1) To deal with fragmentation of responsibilities, as well as ill-informed policy implementation, the central government should develop a comprehensive Environmental Protection Act as soon as possible and establish a high level decision-making

body within the State Council with power to influence other departments.

2) New or emerging protection measures also need to be practiced on a larger scale, such as the 'Three Rivers' protection zone, ecological compensation mechanisms, and culturally specific conservation practises.

3) Increased participation from NGOs and civil society in biodiversity conservation should be encouraged to maximise the resources available to deal with serious ecological problems. In addition to public education, China's civil society organisations should be more directly involved in the practice of conservation and be empowered to represent the interests of biodiversity conservation as well as of local communities, and influence policy.

4) Until now, the study of biodiversity in China has been extremely limited. A long-term ecological monitoring system should be built to monitor ecosystems, collect basic scientific information regarding biodiversity, and inform policy-making.

7. Water resource management

Summary

Water scarcity and water pollution are becoming more acute problems worldwide, especially in developing countries. Since 1992, China has made encouraging progress in addressing these dual problems in water resources management, but enormous challenges remain.

Over the past 20 years, China has maintained an objectively respectable water consumption growth rate against GDP—1% annual average growth for water consumption against 10% annual average growth for GDP.

Much of the credit is due to continually improving water resource management policies, with 2011 bringing the strictest policies yet.

Unfortunately, even this rate of growth has proven unsustainable. China's basic predicament is that it is a water scarce country: China is currently home to 21% of the world's population, but only 6% of its freshwater resources and 8% of its arable land. The country must decrease water consumption, not simply allow growth at a low rate: without this decrease, water scarcity will only grow in seriousness as an impediment to economic development.

Further, making a challenging situation

worse has been increasing water pollution, which decreases the quality of already scarce water resources.

Current policy weaknesses

Looking back on the past twenty years of water resources management policy development, implementation, and enforcement, some weaknesses in the current situation readily reveal themselves.

- Some local governments have and continue to overlook the importance of water resources management. Using much of their available water resources in the short-term means less resources available in the future. Their focus on short-term economic growth sacrifices long-term economic growth.
- Stakeholder input in the policy process is too disorganised. Water is a resource everyone needs, and so it is natural that many government agencies at many levels of government are involved in the policy process. However, lack of coordinated organisation of the enormous amount of input makes it difficult to plan, implement, or enforce policy, especially for the long term.
- Lack of market-based policy instruments. Water prices, water rights allocation, ecological compensation measures, etc. are all instruments to improve water efficiency and pollution control. Although exploration of



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I want to see people live happily on a vibrant Earth.

-ZHENG Ping

applying these policy instruments has occurred at different levels, policymakers face challenges of reforming current policy frameworks and management approaches so as to make these market-based instruments work effectively.

- Lack of public participation in the policy process. The input of various government bodies is enormous, however input from the public is virtually non-existent. Linked with this is a lack of water resources management communications on the part of government to the public.
- Lack of a sustainable construction framework for hydrologic engineering projects.

Policy recommendations

To help China address the weaknesses mentioned above, we provide the following policy recommendations:

- 1) Establish powerful coordinating bodies with decision-making authority at the various levels of governance. Instead of many disjointed government agencies unsure of how to coordinate with one another on water resources

management, we propose the establishment of powerful coordinating bodies at the central government and watershed levels. At the central government level, there should be one coordinating body that absorbs representatives from the Ministry of Water Resources, Ministry of Environmental Protection, National Development and Reform Commission, State Forestry Administration, Ministry of Agriculture, and other relevant central government agencies. At the watershed level, the current coordinating bodies of the major river basins should absorb representatives from all basin management institutions in all provinces within the basin.

- 2) Accelerate the application of market-based policy instruments.

The use of market-based policy instruments can diversify the policy mix, and is particularly important in China, which has long depended on regulatory policy instruments. Reform in the areas of water prices, water rights allocation, and water pollutant discharge should be accelerated and a trading system established in the next five years. Further research and analysis on demands for water consumption and pollutant discharge by different sectors should be strengthened accordingly.

Also, a number of local governments are now exploring ecological compensation mechanisms. These should be made

more market-oriented as this will decrease local government dependence on central government funding.

- 3) Develop a sustainable construction framework for hydrologic engineering projects.

Many hydrologic engineering projects have come online in the past 20 years, and many more are in the pipeline. However, a number of these projects have negatively impacted the environment where they are situated. Therefore a sustainable construction framework is needed to prevent future projects from having these negative impacts.

Hydrologic projects must take environmental flows and river-lake connections into consideration to safeguard the natural self-cycling function of waterways. Further, such projects, especially hydropower projects, must reduce impacts on river ecosystems. It is particularly important to avoid severe river droughts and other disturbances to the migratory and reproductive patterns of aquatic species.

- 4) Strengthen public participation in water governance.

Public participation can play a significant role in improving water resources governance. A public expressing its interests can lead to more rational policy. Government must create a pathway for public participation in the policy process, as well as improve communications for a more informed public.

8.Addressing air pollution

Summary

Air Pollution presents a serious threat to all three aspects of sustainable development defined in the Our Common Future report in 1987 (Brundtland, 1987). However it has only been high on the political agenda since the late 1990s in China, and particularly since the preparation for Beijing Olympic Games. Within both the Rio and United Nation Framework Convention on Climate Change (UNFCCC) processes, air pollution has not been as prominent as energy security and climate change, and only discussed in the context of co-benefits for the reduction of air pollutants and greenhouse gas emissions (IPCC, 2007). But there is growing realisation that air pollution, along with climate change and other environmental impacts, are severely affecting economic growth.

A large number of studies have demonstrated that air pollution is associated with a range of adverse health outcomes, ranging from increased mortality to subclinical respiratory symptoms. The World Health Organisation (WHO) estimates that annually 5.3% of the deaths worldwide (or about 3.1 million people) are attributable to air pollution (2% from outdoor air pollution and 3.3% from indoor) (WHO, 2009).

The majority of people living in urban areas in developing Asian countries are exposed to unhealthy levels of air pollution. A CAI-Asia survey of ambient air quality levels reported for 2009 from 234 cities in developing Asian countries, shows that only 1% of these cities met the WHO PM₁₀ guideline (20µg/m³) and 64% could not even meet the most lenient WHO air quality interim target 1 (70µg/m³). The analysis

included 32 Chinese cities of which 81% could not meet WHO Interim Target 1. By comparison, of the 58 cities from developed Asian countries (Japan, Korea and Singapore), 5% comply with the WHO air quality guideline and 100% of the cities are within the WHO air quality interim target 1. In China, depending on the size of the city, the level of pollution and the pollutants covered in analysis, air pollution translates to costs that can range from US\$2.34 million (Civic Exchange, 2008) annually to US\$1.1 billion (Zhou, 2005). As of 2010, about 666 million, or half (49.68%) of China's 1.34 billion population live in urban areas (NBS, 2011). With the current rate of urbanisation, the urban population in China is forecasted to reach 926 million in 2025, and 1 billion in 2030.

The analysis in this chapter uses the Bellagio Principles for the assessment of sustainable development, and therefore will focus on the "learning" process, rather than determine "what's wrong"; it will focus on how to engage multiple stakeholders to "rethink priorities, reset their goals, re-chart their course of actions in response to the new insights" (IISD, 1997). The insights in this chapter relate to air quality management challenges in urban areas: how can air quality in cities/urban areas be improved so that they are more liveable?

Overview of Air Quality Management in China

There has been limited study of the systematic review of Air Quality Management (AQM) in China, except for brief summaries of air pollution prevention and control policies (WB-MEP, 2011). Integrated AQM practices in China can be found mainly before and during major events such as Asian Games in Guangzhou 2010, and the



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Shanghai World Expo in 2010, as well as the Beijing Olympic Games in 2008. Through these major events, public awareness about AQM increased and as a consequence, the demand for more AQ data and knowledge is also increasing. In the meantime, significant amounts of government spending have gone to tackling air pollution challenges including, but not limited to, deployment of air quality monitoring systems, cleaner energy and cleaner production, as well as public transport prioritisation.

The trend of the Air Pollution Index (API) in the period 1999-2004 suggests a general improvement of air quality in Chinese cities (CAI-Asia, 2007). From 2003 to 2009, the average PM₁₀ concentration in 113 Chinese cities decreased from 126 μ g to 87 μ g (WB-MEP, 2011). However the general improvements of AQ are still far from close to providing a healthy environment for the public. More transparent, inclusive and practical actions are being pushed for by public voices, as evidenced in a number of cases: Suspension of a PX Project in Xiamen in 2007, establishment of a public air pollution map in 2008, incineration plant disputes in Guangdong in 2009, and debates on PM_{2.5} data from the US Embassy in Beijing and PM₁₀ data from the Beijing Environmental Protection Bureau (EPB). Public pressure, equipped with increased knowledge about air quality impacts on health and livelihoods and availability of advanced mobile monitoring devices, will improve transparency of AQM information and create more incentives for effective policy measures.

Fundamental Challenges

AQM in China has achieved significant progress as evidenced by the 11th Five Year Plan which set a binding target for 10% SO₂ reduction, together with energy efficiency and economic growth targets. In 2010, State Council guidance on RAQM (2011) reflected an increased appreciation of the scientific basis for

Take a deep breath under the blue sky and enjoy life.

-PENG Yan

AQM- air shed based rather than being administrative boundary-based. The approach to AQM has shifted towards more science-based policy and there seems to be a general consensus for this approach. However three factors present challenges to the advancement of this approach:

- Lack of a mechanism to develop shared rules and principles for regional collaboration;
- Lack of coherence between environment planning and overall economic and industrial sector planning; significant variation of AQM capacity among various parties within the same region. This factor has been often neglected because analysts tend to be attracted by top-down and macro issues.

There are very few organisations which work at both the national level and local level. Therefore policy appraisals do not sufficiently and accurately address the gaps between policy and implementation. For the same reason, policies are often formulated without sufficient understanding of real problems at the local level. It is fortunate that the Clean Air Initiative for Asian Cities works at both the city level and national level and has gained substantive understanding for its city network in China about the key barriers.

Policy Recommendations

This report provides the following eight recommendations:

- 1) Establish partnerships, before the collaboration mechanism, among different cities and provinces within a region. Partnerships can form the basis for all parties to discuss and identify what mechanism(s), principles and rules are needed to promote RAQM.

A step-by-step approach is needed for partnership building but transparency and data availability to all parties in this region is a requirement. An independent body may be needed to facilitate the dialogue and discussion in the beginning of the process.

- 2) Strengthen collaboration mechanisms among EPBs.

- 3) Promoting a low-emissions urban development framework for cities as clean air and sustainable cities go hand-in-hand.

- 4) Adopt a systematic approach to AQM through a clean air action plan formulation process. This process could be instrumental to strengthen the EPBs' position of influence in setting clean air objectives, conducting systematic and consistent AQM assessment, and providing emissions monitoring reports and recommendations to city governments. This process allows the EPBs' role to evolve from a marginalised government agency to that of an overarching advisory and inspector.

- 5) Proactively promote public participation in AQM through publishing comprehensive reports on city clean air management so that EPBs and the public are allied in advancing the clean air agenda.

- 6) Establishment of an annual event such as national and regional Air Quality Conferences to encourage innovation and best practice sharing of city and regional AQM.

- 7) Develop a capacity building system and formation of national technical advisory groups composed of Chinese and international experts on specific AQM topics to give concrete support for cities and regions.

- 8) Establish and institutionalise a national system for knowledge management and capacity building on AQM, with consideration of greenhouse gas emissions as co-benefits. This should make better use of other knowledge and capacity building mechanisms, such as city visits, city-twinning and city networks, webinars, study tours and exchange programmes.

9. Municipal solid waste management

Summary

China has experienced a dramatic increase in quantity of Municipal Solid Waste (MSW) over the past 20 years. Although the quantity of MSW generated per capita (0.9kg/day) is lower than in developed countries (Giusti, 2009), the amount of collected and delivered MSW has grown from 82.6 mn tons to 157.3 mn tons from 1992 to 2009. The composition of MSW varies between regions, but generally is composed largely of organic waste, with an increasing proportion of packaging materials, as well as dangerous waste which is mixed into MSW causing disproportionate environment impacts. The waste collection and recycling sector comprises a large number of informal waste collectors, medium-small scale waste processing plants, and a few large enterprises.

Significant improvements have been made in the waste treatment sector and in the development of waste management laws and regulations. The Cleaner Production Promotion Law (CPPL) and Circular Economy Promotion Law (CEPL) placed the principle of Reduce, Reuse, Recycle at the core of sustainable development. Together with a requirement that waste disposal not impact negatively on the local environment, these form the principles which ostensibly guide waste management in China today. These principles are consistent both with Agenda 21 as well as the concept

of Integrated Solid Waste Management (ISWM). ISWM involves five levels of management: prevention, reduction, reuse, recycling and recovery. ISWM is an important standard for successful waste management systems, and this report uses it to assess China's progress.

The report finds that despite progress in legislation, detailed regulations and specific standards sometimes duplicate themselves or conflict with each other. In addition, the implementation of measures regulating upstream waste reduction and segregation is very weak. While the recycling sector is governed by the Ministry of Commerce, it has not been integrated into an overarching MSW management framework. In addition specific rules and regulations that are being introduced may lead to the marginalisation of individual waste collectors and the small-scale recycling industry. On the other hand, a series of policies encouraging private investment in public infrastructure through BOT (Build - Operate - Transfer) have aimed to accelerate construction of waste treatment facilities.

Over the past twenty years, the waste treatment sector started almost from scratch, and capacity has increased rapidly, especially during the past ten years. The proportion of MSW that achieved the standard of 'harmless' to the local environment reached 71% in 2009 (MSW Treatment Committee,



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*I want to see a world
where all voices
are heard, and
power, benefits and
responsibilities are
equitably allocated.*

-CAI Chao

Environment Protection Industry Association of China, 2011). Landfill remains China's dominant MSW treatment method, but the rate of increase has slowed in recent years. Incineration accounted only for 1.3% of total collected and delivered MSW in 2001, rising to 12.9% in 2009 (ibid.). Waste incineration is now recognised as an emerging industry and is attracting significant investment. There are more than 10,000 plastic regenerating enterprises (Hou, 2006), and large waste plastic trading markets and process centres are located mostly in middle and eastern China. The estimated amount of waste plastic reached 9.6 mn tons in 2005, and 6 mn tons of that was recycled.

Stakeholders' interviewed included officials, scholars, civil society and NGO representatives, and waste sector practitioners. Despite wide agreement on achievements in legislation and development of the industry, divergences

exist on many issues. A researcher from the Chinese Research Academy of Environmental Science criticised the framework of the legislation. There is no clear leading law and specific regulations underneath it targeting key issues. The two promotion laws (CPPL and CEPL) are not compulsory in practice. Rules and policies regulating the reuse and recycling sector are separated from the waste legislation system. Lack of a clear timetable for action is another important flaw according to NGO interviewees. Unclear goals and vague enforcement measures make some regulations more likely to be aspirational rather than practical measures.

In terms of incineration, the focus of dispute has shifted from pollution emitted by incinerators and its health impacts to other issues, including whether plants are constructed and operated to standard, whether the BOT process is fair and transparent, and how public participation can influence decision making. Fundamentally, government is placing more emphasis and allocating resources to downstream treatment rather than upstream prevention and reduction. Moreover, the major worry of anti-incineration groups and NGOs is that fast increasing capacity of incinerators will outpace the quantity of suitable waste generated for incinerating. It is possible that incinerators will compete with the recycling sector for combustible waste materials thereby discouraging

government, beholden to the BOT process, to promote reduction measures.

Although recycling has been reckoned by UNEP (2011) as one of the most important sectors in employment generation and poverty alleviation, most small scale waste collectors and enterprises struggle with poor equipment, hard working conditions as well as pressure from suppliers, clients and the government.

Small and medium scale companies are currently exploring innovative models working together with the community and municipal public enterprises. According to one senior practitioner in Beijing, there is cooperation with communities to segregate and collect waste and deliver it respectively to public landfill, food-waste treatment facilities, as well as recycling and regeneration plants which achieve high environmental standards. In addition, there have been notable private initiatives such as the 'Green House' concept, which is designed to promote comprehensive sorting and collection systems in urban Chinese communities.

Public participation in decision-making has progressed. Civil society is represented by a number of citizen pioneers and NGOs are also playing an increasingly important role. Anti-incineration protests in past years have received wide public attention and slowed the construction of incinerators to a certain extent. However, these

exchanges between the public and government follow no clear rules, and provide no legal legitimacy (Tang, 2011). The outcome for each case depends highly on the strategy and influence of the public. How to establish an effective and inclusive communication channel for problem-solving between the two sides is an important issue. At the same time, it is encouraging to see that campaigns have gone beyond NIMBYism. Anti-incineration campaigners have become citizen experts, policy researchers, and sometimes government advisers on waste issues.

In summary, according to the five levels of ISWM, China has not yet moved from waste treatment to waste management. Laws and regulations tend to be a combination of public opinions balanced by the power among different stakeholders. Weak implementation compromises the need to deal with vast and growing volumes of MSW.

Policy recommendations

Conscious of feasibility and the principles of ISWM, this report makes the following policy recommendations:

- 1) Taking into account the level and pattern of China's consumption, monitor the whole process of waste generation, collection, delivering and treatment, and make practical national and regional MSW reduction plans.
- 2) Carry out Extended Producer Responsibility (EPR) pilot projects in high

polluting industries and prepare for future scaling up. Guide consumers' consumption behaviour and expand the market for products with less packaging to encourage industry to change practices.

3) Integrate existing public-private cooperation models with initiatives such as 'Green House', and establish a thorough and effective MSW separation, collection and transportation system.

4) A participatory formalisation process should take place for the small-scale recycling industry. This process should be supported by government and broadly involve the voice of the recycling sector.

5) Provide support for enterprise accreditation, land use plans, technology and equipment, and financial and tax policy to the small-scale recycling industry, as well as technical support and training on avoiding environmental and health risks in processing.

6) Promote composting and other advanced technology targeting kitchen waste. Improve segregated MSW facilities to encourage upstream segregation.

7) Disclose information on MSW volumes, composition and planned handling facilities, and strengthen public supervision. Ensure the public make informed decisions in choosing waste treatment methods and in their consumption behaviour.

10. Energy reform: remove institutional barriers to achieve an energy system of low carbon, high efficiency and clean

Summary

Energy systems are crucial to modern society and economies. Without low-carbon, high efficiency and clean energy systems, sustainable development will be beyond reach. Many countries across the world have been renewing their energy systems from being dependent on fossil fuels to eventually be dominated by renewable resources. This chapter will examine China achievements since 1992, what barriers have yet to be removed, and what policies can provide solutions for the future. Stakeholders including a leading government research centre, an energy policy foundation and environmental campaigners have been interviewed. The chapter attempts to demonstrate the complexity of the current debate on energy issues.

Achievements and challenges, 1992-2011

The development of China's energy sector has played a significant role in powering the economic boom in the period 1992-2011. China became the largest primary energy producer and consumer in 2009 and total electricity consumption is only behind that of the United States (IEA, 2011). China's energy consumption is dominated by coal and oil. Renewables accounted for about 9% of total primary energy consumption by 2009 (People Daily, 2010). Since 2005 China has made great progress in development of renewables. In 2010, power generation from renewable energy resources was 764.54 billion KWh, approximately 18.2% of total generation

I long for a future in which a just society and a healthy nature make our world sustainable.

-ZHAO Ang

(EIA, 2011). In addition, the energy system has been successful in providing an affordable energy service for most Chinese residents although there is still potential to cut expenditure on energy.

Despite being the largest energy consumer, China is a long way from being a smart energy user. Firstly, the dominance of coal in China's energy industry, presents crucial challenges for sustainable development, particularly increasing carbon emissions and serious local environmental pollution to the air, water and soil. The international pressure to reduce carbon emissions reduction is increasing as China's energy-related carbon emission became the largest in the world in 2007. Domestically, the growing use of coal use may bring huge environmental and health costs. This trend is not expected to decline in the near future based on current energy consumption models. A study (Mao et al., 2008) demonstrates that the external environmental and social impacts of coal use in China costs up to RMB1.7 trillion, approximately 7.1% of GDP in 2006. Apart from the problems of coal addiction, the significant development plans for hydropower and nuclear in the

decade to come also raise concerns for local livelihoods, environmental change and security. Secondly, China's energy industry is still relatively inefficient compared with the world average. With regard to energy intensity of the economy (average energy input per unit of economic output), China is far behind the global average (IEA, 2011). This situation can be attributed to three factors: the process of industrialisation; the high proportion of heavy industries in China's economic mix; and underdevelopment of energy efficiency. Thirdly, Chinese energy companies have not promoted technology innovation. For example, Chinese wind turbine manufacturers entered the market by licensing in 2003-2006 and have not held cutting-edge technology in the field despite dominating domestic market share since 2009. Fourthly, the power grid is monopolised by two giant corporations that have little interest in the reform needed to facilitate renewable energy and distributed energy systems. Without reform, the next generation smart grid system which maximises use of renewables will not be possible. Fifthly, the decision making process for energy policy has been dominated by the National Development and Reform Commission and other government ministries. Individual energy consumers non-governmental organizations and private companies have no access to energy policy decision making. This is an institutional obstacle for a smart and effective energy planning in the long term.

Remove barriers

To achieve a clean, low-carbon and high-efficiency energy system in the decades to come, Chinese policymakers must address the following challenges: public participation in energy policy making, energy efficiency, renewable energy technology innovation and power grid reform.

An institutional mechanism should be provided to facilitate effective public participation in energy policy. On the one hand, the government should build a scheme which is transparent in how and what action officials take in response to suggestions and input from the public and civil society groups. For instance, the public debate on the residential electricity price ladder has been not sufficient. The government can do more to improve the public discussion of this issue. On the other hand, NGOs should continue advocating democratic, transparent and science-based energy decision making.

Energy efficiency can help achieve more efficient economic development as well as important positive environmental benefits (IEA, 2006). China's energy intensity is still higher than the global average (IEA, 2011). To change this situation, China's government needs an appropriate mechanism to set energy pricing fairly and efficiently. In addition, higher investment in energy efficiency should be spent on technology development, experience exchange and capacity building, which

only accounted for 5% of total energy efficiency investment in 2006-2010 (ERI and CERS, 2011). In the 12th Five-Year Plan (2011-2015), the share is expected to increase from 5% to 15.4%. This change in investment is expected to improve energy efficiency significantly. NGOs can play a role in supporting energy efficiency. In 2004-2005, a network of environmental NGOs advocated controlling the indoor temperature to no lower than 26°C with air conditioning in order to limit overloading of the grid during summer. The campaign inspired the birth of the Summer Air Conditioning Provision in 2005.

Restructuring investment in renewable energy may help technology innovation in renewable energy. Although China is the largest market for wind power and solar water heating, China still lags behind America, Denmark, Germany and Japan in cutting-edge renewable energy technologies. China's renewable energy investment, the largest in the world since 2009, focuses on the volume of projects, rather than technology research and development (R&D). According to a study (UNEP and BNEF, 2011), China spent US\$0.13 billion in R&D for renewable technology in 2010, while America and Europe invested US\$1.5 billion and US\$2 billion, respectively. Power grid reform, aimed at an effective, responsive and environmentally friendly grid system, should be kicked off as soon as possible. Reform can pave the way for realisation of an end-user based smart grid, higher penetration of renewable energy, wide application of distributed



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energy systems and deeper harnessing of energy efficiency. Each year, hundreds of billions worth of investment goes to the building of huge power stations and extra-high voltage grid projects. But very little money has been used on demand-side responses, medium and small distributed energy systems, and innovative decentralised energy services. Since 2011, grid integration of wind power has become a big problem in the renewable energy sector. Although at many of China's colossal wind farms, wind turbines fail to meet the requirements for grid integration under some conditions due to technology weaknesses, the unwillingness of grid companies to invest in technology and capacity for integrating with wind power and other renewables also plays a big part in the problem. Therefore, breaking the vested interests of grid giants and carrying out grid reform based on the long term national interest and sustainable development is important. In the context of international efforts to fight climate change as well as the

national interest in sustainable economic development, China must transform its energy system from being dominated by fossil fuels to being based on the use of renewable energy. During this process, China needs to address international energy issues such as security of energy resources trading, the impact of Chinese energy investment on local societies and ecology, international low-carbon technology transfer. As the largest energy consumer in the world, China must take on responsibility in the process of creating a global energy system. Although China has limited experience in international cooperation in the energy industry, it can certainly provide success in the long term if it acts as a responsible player.

Policy recommendations

To achieve an energy system which supports sustainable development, China must remove institutional barriers. This report provides the following policy suggestions:

1) Provide an effective mechanism for

the public to participate in energy policy decision making. The policy making process must be transparent, fair and effective.

2) Harness the full potential of energy efficiency by offering sufficient financial incentives and energy pricing.

3) Internalise the external costs of energy resources into energy pricing to make renewable energy economically competitive.

4) Stimulate renewable energy technology innovation by setting up an effective financial support mechanism.

5) Carry out power grid reform to achieve an open, interactive and environmental friendly grid system, which would make possible better development of an end-user based smart grid, higher penetration of renewable energy, wide application of distributed energy systems and deeper harnessing of energy efficiency.

Chapter 4

Implementation and Approaches

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HUANG Haoming

1. Fiscal policy and green finance

Summary

Fiscal policy and green finance can provide strong support for China to achieve its emissions reduction targets and pursue its transformation to a low-carbon green economy. This chapter reviews the fiscal and financial policies that China has utilised in promoting green, low-carbon development during the past 20 years, and finds that there has been great progress in environment-related taxes and subsidies, pollution charges, green government procurement, public investment for environmental protection, and resources and energy pricing. The financial sector has also accelerated the process of transformation and innovation, providing funds for the development of low-carbon industries and effective incentives for technological innovation. Additionally, since 2007, the government has unveiled a series of landmark green finance policies to optimise the allocation of resources, including "Green Credit Policy" promoting banks' green lending, "green securities" regulating the environmental audits in financing and refinancing, as well as "green insurance" regulating the insurance business. With the establishment of carbon markets and pilot projects at the regional level, financial institutions are gradually becoming more involved in the development of carbon finance and low-carbon technologies. These recently adopted policies and measures have promoted energy saving, emission reductions and the development of low carbon industries, and guided the pattern of investment towards these areas.

Challenges raised by diverse voices

In addition to these positive steps, challenges exist as reported by a range of incorporating the viewpoints of a range of stakeholders. In response to the financial crisis in 2008, China launched a 4 trillion RMB fiscal stimulus plan. By giving priority to investment, the plan has effectively leveraged more capital into low-carbon industries and innovation, which will result in long-term energy-saving, improve the effectiveness of emissions reduction efforts, and promote economic restructuring. However, it can also be seen that much of the investment has poured into infrastructure, construction and heavy industry, such as steel and cement. These traditional industries continue to produce significant carbon emissions, which is in direct opposition to the stimulus plan's initial aim of restructuring for a greener economy. This abundant capital may result in short-sighted expansion, redundant construction, approvals in violation of regulations, as well as allowing building prior to approval, which could produce a new round of bad bank loans. With the support of favourable policies and fiscal subsidies, renewable energy industries such as wind power and polysilicon are developing rapidly, even overheating, which also poses a series of problems. Taking the photovoltaic industry as an example, about 90% of photovoltaic products produced are for export. The subsidies stimulate market expansion, which has created overcapacity in the photovoltaic industry, but meanwhile there is a lack of external demand due to the global financial crisis. Different from developed countries, whose subsidies are mostly paid at the consumption end in order to promote development of the market, the

I look forward to a future where more and more people are hopeful and willing to believe that the best is yet to come, and are able to work towards this brighter future.

-BAI Yunwen

subsidies for new energy in China cover the entire industrial chain. In addition, supervision over the use of subsidies and performance appraisal of fiscal input needs further improvement. In terms of access to financing, the green Small and Medium Enterprises on the low-carbon industrial chain are facing problems. In particular they lack effective channels to obtain loans from banks, financing from venture capital, as well as private equity. Chinese banks are increasingly expected to improve their performance in implementing the Green Credit Policy. For example, banks' information disclosure related to their green lending performance is still voluntary, and tends to be unclear. This is partially because the criteria of industrial classification and statistical standards are not unified and are still debated, especially regarding the undefined nature of high energy-consuming and high polluting industries.

There is also controversy about whether industries such as nuclear

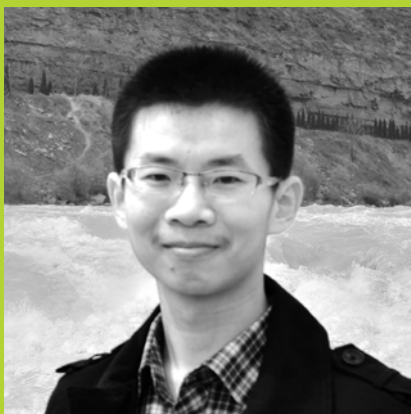


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power can be classified as "green" industry. Along with the introduction of a new green finance policy, Chinese NGOs have tried to use financial leverage to intervene in environmental issues and to play the role of a truly independent observer. However, when overseeing the environmental performance of financial institutions and companies listed on stock exchanges, local NGOs, as a third-party, encounter institutional obstacles of information confidentiality, and information disclosure laws and regulations are often lacking.

Finally, this chapter analyses the status quo and shortcomings of China's carbon markets and carbon finance, and claims that the environmental and social impacts on the local community brought by Chinese outward investment projects should be considered and examined from a global perspective.

Policy recommendations

In order to address these problems, the article puts forward a number of suggestions:

- 1) Establishing pricing mechanisms that reflect resource scarcities and environmental costs, removing unreasonable energy subsidies, and accelerating the progress of a carbon tax.
- 2) The transparency of financial expenditure should be enhanced and the timely disclosure of information to the public should be improved in order to provide for open and transparent public finance.
- 3) The government should improve the regulatory and enforcement system of green credit, and formulate supporting policies for the development of low-carbon and environmentally friendly industry, such as loss-sharing mechanisms for the financing of energy efficiency projects, subsidies on interest payments as well as tax exemption and reduction. It also needs to actively broaden the SMEs' direct financing

channels in low-carbon industries and let multi-level capital markets play the financing role, especially stock market financing, venture capital and so on.

- 4) The commercial banks should enhance the disclosure of green credit information, accept the participation and supervision of public and non-government organisations, and gradually introduce the carbon intensity index of credit.

- 5) With its expanding international influence, China should fully take on its responsibility as a 'global citizen' during the process of pursuing its own sustainable development. Overseas Chinese enterprises must increase communication with local and international civil society, as well as local communities, and adopt best international standards and practice, in order to reduce their environmental footprint across the world, and to help contribute to the sustainable development of countries, businesses and civil society at the global level.

2.Environment friendly technology transfer

Summary

Technology transfer is one of the major issues addressed by the Rio Declaration and relevant international frameworks. The debate has been focused on the responsibility of the developed countries rather than the effort required in developing countries. This chapter studies some cases of environment friendly technology transfer from developed countries to China since the 1992 Rio summit and assesses the role of governments in it (including developed and developing countries) role in it. It is written based on desk reviews of existing reports and interviews with practitioners.

Three case-studies have informed this chapter:

- The case of Sino-Japan Green Aid is a governmental driven technology transfer program in the early 90s. It succeeded in demonstrating advanced pollution reduction technologies to industry in China. However, the aim of selling equipment and technology to China was not successful due to big gaps in finance, technology management and need for reducing pollution.
- The Clean Development Mechanism (CDM) demonstrates the effectiveness and limitations of international funding mechanisms. Theoretically selling Certified Emission Reduction permits to developed countries is a fair way of address the positive externality of advanced carbon reduction technologies. However, due to the design of the trading scheme, it failed to generate long term incentives for tech innovation or transfer

because: the funding is too limited (the carbon price is too low), and the scale is too small (project based); it is hard to pass the price signal on to the technology market.

- The case of transfer of ultra-super critical coal fired power generation technology provides insight in to the well-known Markets for Technology model in a large government-monopolised market. Given the huge size of the electricity market and industry being well prepared (both financially and technologically), the technology has been successfully transferred. The equity issue was also analysed in this case.

The three cases have to be analysed within the Chinese context, which includes:

- China's development of environmental policy has created market need for environmentally friendly technologies. Laws, regulations, and public awareness have made environmental protection a priority in the budgets of companies and governments. Meanwhile the inadequate implementation of environmental policies and monetary incentives, as well as lack of public participation, are still major road blocks to developing markets for green technology.
- China's rapid economic growth and enormous market scale have made China so attractive for foreign companies that some might be willing to enter early to compete for market share and risk technology being stolen.
- China is developing its technology market by introducing patent laws and

regulations. The system is still far from complete, but it is being improved. Chinese companies have learned to use patents to protect their technology in the domestic and global markets.

- The government's ambition and programmes for tech development including domestic innovation and tech absorption have been effective in closing the technological gap between China and industrialised countries. Rapid industrialisation has enabled Chinese companies to innovate, adopt and integrate foreign technology more efficiently. However, China's domestic innovation policies have been criticised for encouraging IPR violations.
- Strong competition and the economics of scale are suggested to have reduced the cost of technology.

The main conclusions are:

- Environmentally friendly technology transfer into China is a phenomenon driven by many changes. The need for advanced technology comes from growing social needs as well as national actions to create a liveable environment; increased purchasing power is a result of economic growth caused by economic reforms; domestic technological capacity to adopt foreign technology is assisted by long term national support for domestic innovation. The progress of environmentally friendly technology is determined by the development of these three factors.
- For technology transfer, both through bilateral cooperation and market exchange, strong governmental

I hope that the value of a person will be judged based on his character and his ability to enable others rather than the resources he possesses.

-CHEN Jiliang

interference in the market means that most of the beneficiaries are likely to be state-owned enterprises or large companies that have good relationships with government. Domestic innovation incentives are also more preferable to these companies. This may create social injustice, distort market competition, and eventually harm domestic creativity as industries become more dependent on technology importing.

- Bilateral governmental co-operation and international co-operation frameworks for sustainable development have neither delivered sufficient funding nor provided effective mechanisms to create significant incentives for transferring environmental friendly technologies. Official Development Aid is good at technology demonstration which can reduce the transaction cost of tech transfer. However it has never provided sufficient funding to reduce the cost of advanced technologies for China.

Policy recommendations

Based on the findings above, this report suggests both developing and developed countries to prevent disputes in technology transfer and cooperate to make appropriate technologies accessible and affordable. The report makes the following recommendations:

1) To reduce the cost of environment friendly technologies, the international community needs commitment from both developed and developing countries to build trust and set a road map towards a just, transparent and

competitive market for technology as soon as possible. Ambitious global and regional goals including environmental protection, financing and removal of trade barriers (of environment friendly technologies) need to be included.

2) International frameworks for sustainable development should provide sufficient funding to maximise the positive externality of environmentally friendly technologies. Developed countries need to honour their commitment on finance at the Rio 92 summit. The funding should be spent on platforms that bridge the information gaps between the demand side and the supply side. The major portion of the funding should be integrated with more flexible mechanisms such as sectoral approaches to create comparable expectation of return in developing countries for appropriate environmentally friendly technologies.

3) Based on development goals and domestic contexts, developing countries can choose the most cost-effective way of protecting their environment. Whether they decide to develop their own innovation capacity or to import foreign technology, or a combination of both, a good legal system that protects innovators' IPR is needed.

4) Developing countries should take more ambitious environmental protection measures such as more progressive policy, stronger public participation and application of environmental justice to create domestic demand for better environmental technology.



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3.Public participation

Summary

Principle 10 of the Rio Declaration is the 'Access Principle' which states that access to environmental information, public decision-making and to justice are three key elements for public participation in sustainable development. To achieve the conditions for social governance where all three aspects are realised, enlightenment and empowerment of individual citizens, development of civil society and good governance are necessary.

Environmental public participation in China since 1992

During the last few decades China has been experiencing the most radical economic and social transformation in its history. Environmental civil society, including both grassroots environmental NGOs and semi-independent groups (such as Government-Organised NGOs), is in the process of emerging and developing. In the 1990s, grassroots environmental groups (such as Liaoning Association of Saunders's Gull Protection and Friends of Nature) were set up by activists and intellectuals, and public environmental campaigns were launched (such as protection for the Tibetan Antelope and Yunnan Snub-nosed Monkey).

After around ten years of environmental awareness raising and educational advocacy, expectations for the role that civil society groups should play have risen. More recently, legal professionals have been working to help pollution victims (CLAPV), consultants have used media and market-oriented campaigns

*In the future that I
desire, conscious
reflection and action
will help people regain
the mercy of nature.*

-CHANG Cheng

against polluting enterprises (IPE), and entrepreneurs with a sense of social responsibility (SEE) have formed new civil society groups. This professional activism has supported the deepening of public participation in environmental protection.

Going into the 21st century, China's joining the WTO raised international expectations of China moving towards more reliable administration and implementation of rules. On the other hand, Chinese citizens have learned the importance of governance transparent administration, especially during major public incidents such as the SARS crisis. In 2004, the government issued the Program for Comprehensively Implementing Government Administration in Accordance with the Law. In this new program, government information disclosure and public involvement in decision-making were highlighted, leading to specific rules issued by the Ministry of Environmental Protection on public participation in Environmental Impact Assessments

and transparency of environmental information.

Theoretically, the government has incorporated access principles into policy. However, there has been widespread lack of implementation of relevant laws and rules. For example, among all environmental impact assessments being inspected, more than 40% were found to be problematic either for quality control or management (MEP, 2010).

At the same time, the judicial recourse for environmental harm has not seen significant improvement in terms of real performance. According to many environmental lawyers and activists, making a case that will be accepted by the courts is a major obstacle that stops judicial remedies from being effective. The priority concern of courts relates mostly to local economic and social stability.

Still, there have been a few bright spots that have occurred within pilot environmental courts, where public interest litigation reform is being experimented with. In this new system, environmental groups with no direct interest shown in the case have been granted the right to bring litigation against those who broke environmental laws and jeopardised the public interest.

Many experts suggest that government dominance is restricting the development of civil society. As government holds significant power and resources, and maintains a monopoly role in many areas, it leaves very limited space for civil society to emerge. Also, with no effective supervision

from civil society, many legal frameworks in China have failed to produce results in contrast with other countries.

Setting up NGOs in China is difficult due to finding appropriate government endorsement and fundraising. Oversight of environmental administration is often inadequate, and grassroots civic environmental movements tend to occur in the absence of NGOs. Through the empowerment of new information technology, citizens can now follow opinion leaders and engage in public discussion, having a notable impact on how environmental policies are formed and decisions are made.

In 2007, thousands of people self-organised via internet and mobile phone messages to demonstrate in the streets of Xiamen, campaigning for the abandoning of a controversial plan for building a huge PX chemical plant. It may be the first time that such bottom-up appeals on environmental issues (rather than NGOs or individual elites) received nation-wide attention since the 1990s. The most important factor was that the mainstream media portrayed those who stood up as active and concerned citizens rather than a small group of ignorant people. In the end, this project was forced to change its location and was moved out of Xiamen.

Following such examples, large-scale environmental issues with many stakeholders occasionally led to grassroots citizen-led campaigns, powerful enough to affect political decision making. Examples include

Firmiana protection in Nanjing, an anti-PX campaign in Dalian and the PM_{2.5} campaign in Chinese cities.

These new civic movement have used the tools of new information technology available to them, especially Weibo micro-blogging, providing a platform to gather public opinion and organise actions that civil society groups in China had lacked. Through these events, opinion leaders emerged such as prominent writers, TV commentators or entrepreneurs of major corporations. While not environmental scientists or professionals in the relevant issue, their calls gain the attention of a large number of people.

Still, experts in civil society groups do not consider the internet as the sole weapon that can solve all environmental problems by generating public attention. Real negotiation still needs to happen, that and cyber-activism may not always be enough. Some have suggested that in-depth investigation and research has been missing in some campaigns which is necessary to convert single success stories into a policy change. Feng Yongfeng, a prominent journalist who is on the board of directors of Green Beagle, states that lacking in-depth investigation carried out by civil society groups or volunteers, lacking the public appeal or litigation brought by NGOs, micro-blogging may only result in 'cause fatigue' in the public. Therefore, the emergence of a civic environmental movement does not mean the end of environmental civil society groups, but means that there are new roles that civil society needs to perform.



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Chang Cheng is dedicated to environmental information transparency, public interest litigation and public participation, he has conducted research on Chinese policies of environmental regulations on listed companies and public participation in environmental impact assessment.



Until now, although new policies have been passed, the majority of government agencies in China still lack the willingness to open their key information to the public and involve the general public in decision making. Civil society groups also lack professional experience, effectiveness and are often not representative enough to balance and monitor the decision-making process. New technology has brought civic movements an unprecedented level of exposure, yet these one-off and case-by-case campaigns are not enough to reverse overall environmental degradation.

In this era of globalisation, poor public participation results in higher ecological costs as damaging industries move into China. In 2011 Chinese environmental groups revealed that Apple used environmentally polluting suppliers in China that pollute rivers and poison residents (Xie Xiaoping, 2011). Chinese local governments, under pressure

to achieve economic progress often compromise on supervision of overseas investment in terms of environmental protection. With the lack of a strong civil society and public involvement, China, notwithstanding its huge economic development, has created artificially low environmental standards.

Policy recommendations

In order to ensure that government decisions are transparent, affected populations have influence over environmental policies and decisions, and public participation can balance the lack of environmental supervision, this report provides the following policy suggestions:

- 1) Lower the required standards for NGOs to be officially registered in China. Allow NGOs to raise funds in various ways and create a more accommodating political atmosphere for civil society to grow.
- 2) Strengthen the implementation of regulation on transparency of

environmental information, and enlarge the scope of information required to be open to the public. Provide basic information to allow the public and NGOs to monitor and influence government decision-making.

- 3) Pass legislation on Public Interest Litigation and emphasise the role of judicial environmental dispute resolution so that cases can be accepted by courts, and NGOs and active citizens can have judicial support to stop environmental destruction.

- 4) Improve the system of environmental impact assessment. Remove conflicts of interest between institutions involved in report preparation and the construction entity. Emphasise the importance of public participation during the EIA process by making the time for consultation longer and providing access to relevant information.

- 5) Deregulation of internet content control, enable civil society to naturally evolve, forming public opinion and monitoring environmental destruction.

4. Gender

Summary

Two decades after the 1992 Rio Conference, the concept of sustainable development has been widely accepted and become the fundamental guiding principle of Chinese development policy and programmes, most explicitly in the recently launched “Twelfth Five-Year Plan for National Economic and Social Development” (2011).

The 1995 United Nations Fourth World Conference on Women and NGO Forum held in Beijing, echoed and reaffirmed the Rio Principle 20, “Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development”. In the seventeen years since, the Chinese government has formulated and implemented several “National Programmes on Women and Development”(1995-2000; 2001-2010), in which women and the environment was identified as one of the six priority areas of development (National Programmes on Women and Development 2001-2010). The “equality between men and women” was made a fundamental policy in the amended “Law on the Protection of Women’s Rights and Interests” in 2005 in order to achieve the commitment to gender equality.

Despite the progress made in the past two decades however, from the perspective of civil society and gender, there is striking unevenness in terms of implementation of the commitments made in Agenda 21, which set the three integral pillars for sustainable development – economic growth, social development and environment sustainability.

In the process of China’s two decades of rapid economic growth, gender

gaps have been widening, along with rural-urban disparities and regional disparities. According to the results of three surveys on the Status of Chinese Women conducted in 1990, 2000 and 2010, the income gap between men and women has increased both in urban and rural areas, despite the high percentage of women engaging in paid work (about 70%, much higher than the world average 53%). In Guangdong Province, which is at the forefront of the country in per capita income and per capita gross national product (GDP), female annual income is only 60% of males. Women’s political participation is still low, with only 21% of the National People’s Congress and only 4-10% of villagers’ committee members being women.

How to build sustainable and equitable development, with gender equality and women’s empowerment as an integral component, has been always challenging. This requires the government, civil society organisations, and other sectors to work together.

At the policy level

In general, environmental protection and gender equality are both proclaimed as basic national policy. But the latter of these is rarely emphasised to the public, even by high-level decision makers responsible for enforcing and implementing this policy. A few notable institutions that are exceptions are the All China Women’s Federation and National Committee on Population and Family Planning. (Women’s Studies Institute of China, Survey on Gender Awareness among Policy Makers, 2004) This lack of gender awareness, to some extent, is a result of the weakness in the implementation of existing laws and policies that advance women’s rights and



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gender equality. For example, although women's land rights are enshrined in the "Law on Land Contract in Rural Areas" (2007), there are many cases each year that women are deprived of their entitlements to land by their communities (mostly dominated by male leaders) due to their mobility and marriage.

At the programme level

Understanding of the correlation between women, gender, environment and sustainable development has for many years remained within the framework of "Women in Development", rather than "Gender and Development". The former is concerned with mobilising women to actively participate in income generation, environmental protection and social development. The objectives of these actions are often to target environmental protection and social development, rather than the realisation of gender equality and women's rights as the core issue. The latter requires understanding and consideration of gender relations, gender divisions of labour, and their different effects on women and men, as well as the cause of gender inequality in deep social and institutional structures. The realisation of gender equality and women's rights is an important indicator for measuring results. There are campaigns like "Women's Forests" that engaged millions of women to plant trees to prevent the desertification in north and northwest China (Chinese Women's Research Society, Chinese NGO Report on 10 Years Review of Implementation of Beijing Platform for Action, 2004). However, we also need to know how women benefited from this campaign in terms of access to resources and social services.

Women's role in sustainable development should not be limited to one of human resources. Thus, development programs should not ignore the disadvantaged position of women, gender discrimination, and should devote attention to women's empowerment

There will be no environmental justice and sustainable development without gender justice.

-CAI Yiping

by applying gender mainstreaming strategies and gender-sensitive policies, so that both men and women can equally benefit from sustainable and equitable development.

Civil society participation – Civil society organisations play a crucial role in achieving sustainable development. In China, recent decades have witnessed the fast growth of civil society and non-government organisations, both working in areas of environmental protection and women's rights. Some women are founders and leaders of well-known environmental NGOs, such as, Ms. Liao Xiaoyi, president of Global Village who was awarded the 2000 Sophie Prize in Norway and the 2001 Banksia International Award in Australia. Unfortunately, many women's NGOs focusing on women's legal rights, migrant rights, political participation, reproductive health and rights, have not yet given priority or attention to environmental issues and women's rights in the comprehensive multi-dimensional framework of sustainable development.

It is encouraging to see that in recent years many initiatives have been taken by multiple stakeholders to ensure the issues concerning gender and development are addressed. A few examples are: the provision of legal aid and services to rural women to claim and defend their land rights; a project aimed at promoting women's participation and leadership in water management in Ningxia Hui Autonomous Region (Gao

Hong, 2012); and, mobilising women farmers to reduce the usage of pesticides in agriculture and raise their awareness of the hazards of pesticides for reproductive health (Sun Jing, Eco-Women, 2012). Many of these projects are joint efforts that involve communities, women's NGOs, government agencies, as well as UN agencies and international organisations, which catalyse a new form of partnership among communities, civil society organisations and government agencies on the basis of participation, empowerment and respect and protection of women's rights.

Policy recommendations

There have been both the gains and challenges in achieving sustainable development over the last two decades from the perspective of gender. Much more needs to be done, especially in the following areas:

- 1) Integrate a gender perspective into all decision-making levels to ensure that laws, policies and programmes for sustainable development are responsive to women's needs and contribute to achievement of gender equality.
- 2) Strengthen and support research on gender and sustainable development related issues, including emerging issues such as "what are women's roles in the green economy", "what are the implication of climate change on women's livelihood and their health", among many others.
- 3) Identify good practices and champions of women's involvement in sustainable and equitable development and disseminate them widely.
- 4) Foster the participation of civil society organisations, especially women's organisations in sustainable development, both in the decision-making processes and implementation.
- 5) Provide financial resources to support disadvantaged and marginalised groups of women, such as minority women, rural and migrant women, young women, and women living with HIV/AIDS or disabilities.

5.Sustainable industry and the green transition

Summary

The industrial sector has been the major driving-force of China's fast economic growth in recent decades. In 2010, China's economy achieved a 10.4% annual growth rate, of which 5.1% was contributed by the industrial sector. In that year, industrial output reached 16,086.7 billion CNY, accounting for 40.1% of total GDP (National Bureau of Statistics, 2011). However apart from the economic achievements, the current development path has resulted in pollution, major environmental issues, health problems, and an economy extremely vulnerable during the global financial crisis. In order to achieve sustainable development, it is crucial to ensure that given its size, industry works towards achieving sustainability. A green economic transition will not be achievable otherwise. Since 1995, the central government has explicitly acknowledged the need to change the pattern of economic development, and started on the path of transforming industry. In this report, three elements of the green transformation are reviewed: control and restrictions for energy-intensive and high-polluting sectors; encouraging clean production and a circular economy; and development of green industries.

- Control and restriction of energy-intensive and high-polluting companies were introduced in order to control the scale of heavy industries in China. Heavy industry contributed 60.2% of total GDP of industry in 2000 and increased to 70.5% in 2009, which is more than the peak level during the industrialisation of Japan, Germany or the US (Lan and Han, 2012). Control measures have been undertaken since the 9th Five-year Plan (1996-2000). During the 11th Five-Year Plan period, the government eliminated inefficient production capacity of 120 million tons of iron, 72 million tons of steel, 370 million tons of cement, 107 million tons of coke, and 11.3 million tons of paper, which jointly accounts for approximately 50% of total inefficient production capacity. However, these achievements were made through the extensive use of a command-and-control approach. Without a more comprehensive market-based approach, the absence of market signals will lead to issues of displacement to other regions.

- Promotion of clean production and a circular economy was initiated in order to improve the efficiency of resource utilisation. During the 11th Five-Year Plan period, the Clean Production Law was implemented covering technology dissemination in 22 key industries'

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I want a future with decent jobs, a safe environment and a more just society.

-ZHANG Xubiao

and 134 demonstration projects. The multipurpose utilisation rate of industrial solid waste rose from 55.8% in 2005 to 69% in 2010 (State Council, 2010). Several important technologies have been developed, for example producing aerated concrete from gangue. More market incentives should be introduced to improve the choices and effective utilisation of such technologies.

- Assistance and support has been provided to green industries in order to create green jobs, support sustainable development and promote technology development. Enormous investment has flowed into the green sector, especially

renewable energy technology. However, more research and innovation should be encouraged in green industries in order to promote progress and avoid a focus on manufacturing.

According to the 'Industry Transformation Plan' (2011-2015), the annual growth is targeted at 8%, strategic industries should reach 15% of total industrial output, energy consumption per unit of GDP should decrease 21% over the 11th Five-Year Plan, water should reduce by 30% per unit of GDP; and R&D investment should increase to 1% of revenue. This plan demonstrates the determination of government. However, there are problems that need to be solved in order to achieve genuine green transformation.

Future challenges have been raised by various stakeholders, including government officials, scholars, NGOs, enterprises, investment agencies and community members.

- An incentive system is yet to be established. Green transformation requires up-front investment and although benefits are realised over the long term, short-term costs are significant, including shutting down energy-intensive and high-polluting companies and substantial investment for green industries. The immediate economic costs become disincentives for

local governments to engage in green transformation.

- Factor prices undervalue resources, leading to controversial market outcomes. Factor prices in China are substantially affected by non-market elements with resources not accurately priced and enterprises responding to distorted market signals. This makes it difficult for enterprises that decide to engage in the green transformation since the existing business model presents much smaller costs. On the other hand, if factor prices rose immediately, a considerable number of small-to-medium sized enterprises would find it difficult to survive.

- Insufficient support to SMEs

SMEs are crucial elements in green transformation. Many of them have become pioneers in green industry, since a lot of energy efficiency and consulting companies fall into this category. Another reason is that SMEs are more sensitive to markets, are located throughout the country, and are well-placed to have local social and environment impacts. These companies should receive more attention. However, most government assistance and support goes to large companies (or state-owned enterprises), and not much to SMEs.

There is enormous potential for economic development around the world, and China's green transition would

I hope for a future where people live comfortably and ideals are possible.

-XU Jiayi

have a global impact. For a long time to come, China will remain a manufacturing powerhouse. It would not be responsible for Chinese policy to simply displace pollution to other countries. In this regard, China's contribution to global economic development in recent decades should be recognised. In relation to the environment however, climate change in particular is not only a local issue, but will have worldwide impacts. This urgency means that trade in green products and technology should not adhere to conventional trade pathways. Lower prices of imported green equipment, e.g. solar panels, should not be seen as dumping and there should be no

trade barriers for these products which generate global environment benefits. China should fully implement policies to save energy and resources, and avoid competing with least developed countries which require resources for development. In terms of technology, there is still a significant gap between China's green industry development and that of developed countries.

Policy recommendations

This report proposes the following policy recommendations to address the problems identified:

- 1) Enhance the coordination and implementation of green development from central and local governments, especially the incentive system, and incorporate comprehensive and environment-oriented indicators into their performance evaluation.
- 2) Improve market-based implementation tools. Support fiscal and financial policy support. Build a comprehensive financial system for supporting green investment
- 3) Encourage research and development and technical innovation. Increase technology transfer and build information sharing platforms.
- 4) Prioritise SME services and provide technology and information dissemination systems in order to assist the development of SMEs.

XU Jiayi

Programme Officer

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Xu Jiayi is dedicated to the issue of the impact of climate change on community development, as well as promoting exchange between domestic and international NGOs on climate change. Xu Jiayi has experience of in-depth study and research in the field of economics and regional development, as well as in the activities of environmental and volunteer groups.

6. National Capacity Building and International Cooperation

Summary

In 1992, China was emerging from the difficult situation created by the political turmoil of 1989, looking for a new direction for the country's development. Deng Xiaoping, the instigator of China's reform and opening-up policy, proposed during his inspection tour of Southern China a clear and specific development strategy, orientation and objectives. Deng effectively promoted China's interests in response to international development trends and laid a foundation for Chinese economic reform and development. In the twenty years 1992-2012, the capacity for sustainable development in China has been enhanced, starting from initial rejection of the concept, to full acceptance of it through experimentation and demonstration of sustainable development practices. Strategies, goals and actions on sustainable development with Chinese characteristics were proposed. Through this process, China's capacity for sustainable development has been promoted and strengthened.

In the context of China's capacity-building framework, China has supported the implementation and practice of sustainable development strategies. Significant progress has been made in the development of legislation and regulations, management capacity of top-level polities (including management by state institutions,

Implementing sustainable development strategy requires enforcement of laws, civil society participation, NGO capacity building as well as international exchange and cooperation.

-HUANG Haoming

policy-making and policy execution), and companies' competitiveness in the area of green technology. These factors have had significant impacts on the implementation and improvement of sustainable development strategies. This is reflected in the following four areas:

- Building the capacity for political and economic reform. China has implemented market-based economic reform, reflecting the nation's capability

and political willingness for effective implementation of sustainable development. The Chinese government recognised the importance of integrating environmental and social aspects as part of its economic 'opening up'.

- Improve the capacity for strategic planning and high-level decision making. China's national Agenda 21 has been incorporated into its Five Year Plans and acknowledged as an important guide. In 2009, the Chinese government for the first time announced a national emission reduction pledge to help address climate change. The strategic decision-making process involves both central and local levels of government, however it is still uncertain whether decisions relating to sustainable development can be effectively coordinated across all levels of governance.

- Enhance institutional arrangements to ensure effective policy design and implementation. Institutional arrangements are still complex, including ineffective coordination between ministries and controversy around interrelated management issues. This makes implementation of policy related to sustainable development even more difficult.

- Provide sufficient design and implementation of environmental legislation. Since 1992, China has established and amended 22 pieces of legislation, ten of which have been directly related to the environment.

Environmental law is now one of the most important parts of Chinese legislation. In reality, however, the legal enforcement is still weak and finance is required for environmental protection. Environmental legislation has not put made environment protection a legal priority, and there remains limited access for public participation and monitoring by NGOs.

Through international cooperation, China has achieved practical experience of the study and application of sustainable development strategies and as a result the government has become more open and pragmatic.

- China's government places a very high value on the international communication and cooperation with other countries in respect to the environment. Prior to the Rio Summit, the Chinese government realised that other countries' experiences are very important for the future development in China. With the approval of the State Council, the China Council for International Co-operation on Environment and Development (CCICED) was founded in April, 1992. This council is a senior non-government advisory organisation, and members are well-known environment experts and academics from China and abroad. Through international communication and cooperation, the government is

improving its strategy of sustainable development in a range of ways. Firstly, the use of laws compels local government to implement the rights and obligations within sustainable development strategy. Secondly, carrying out a "Green GDP" accounting system that will establish China's own index system for sustainable development. This system calculates conventional GDP minus losses associated with environmental pollution, wasted resources and ecological degradation. Thirdly, the government aims to develop and implement a standard method for evaluation of the implementation of sustainable development.

- Build the capacity for sustainable development by international consultation and cooperation. As a result of public environmental consciousness and in decision-making, the public is increasing able to make sure that the government decisions respect the popular will. This encourages public support for the government's sustainable development and environment protection strategies. How can the public be encouraged to participate in sustainable development strategy? First of all, environmental protection should be brought into the education system, not only vocational education but also compulsory education. It is important that there be universal education of children on the importance



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Huang Haoming is engaged in the development of and strategic assistance to NGOs, with over 20 years' experience in promoting exchange and cooperation among international and domestic NGOs, government and the private sector. Huang acts as a part-time professor at several universities and as a board member or advisor to a number of NGOs.



of environmental protection. Secondly, we should use the influence of non-government organisations to attract public involvement. The government should make use of the “round table” method used in many countries, in order to attract non-government organizations to participate in the process of making decisions and supervise the enforcement of environmental law.

- China actively participates in negotiations on subjects like international environmental protection, climate change and sustainable development. While considering the Chinese economic situation and development model, the Chinese government is able to negotiate with different countries with different approaches based on the principle of common but differentiated responsibilities. At the same time, China takes pragmatic actions to respond to the problem of climate change: China established a fund for sustainable development to offer two-way communication, technical assistance and financial support. To sum up, China is now receiving more attention for its position in the climate change negotiations. Developed countries and developing countries have different requirements and objectives. From the Chinese perspective, we should consider cooperation with both groups.

- On the international level, the Chinese government could further cooperate with international organisations and non-government organisations to promote capacity building. This includes the government’s consideration of international issues in the areas of economics, finance, agriculture, energy, environment and climate change which affect the implementation of sustainable development strategies and goals.

In terms of international communication and cooperation in the area of sustainable development, problems still exist. First of all, assistance for Chinese development from international organisations is decreasing or sometimes being cancelled. For example, Britain, Germany and Australia will phase out assistance for Chinese development. Secondly, international development cooperation often proves difficult due to lack of agreement or poor coordination of project planning and management. Thirdly, it remains difficult for government departments to work in a coordinated way where responsibilities overlap, including ministries such as Foreign Affairs, Trade, Finance, and Environment amongst others. Lastly, it is still an unresolved problem that international non-government

organisations cannot register in China, and many of them are registered in China as companies.

Policy recommendations:

In view of these findings, this report proposes the following six policy suggestions:

- 1) Accelerate the speed of political reform to ensure the implementation of sustainable development strategies in China.
- 2) Implement the coordination of top-level policy design and solve the problems arising from conflicts between sector ownership and local interests.
- 3) Improve laws and regulation to advance with the times and promote the rule of law.
- 4) Enhance the core competitiveness of enterprises and guide enterprises to increase scientific research investment. Supervise enterprises to ensure they fulfil their social responsibilities.
- 5) Accelerate the overall development and the promotion of non-government organisations; promote professionalization of civil society organisations.
- 6) Use international communication and cooperation mechanisms to promote the realisation of China’s sustainable development goals.

Afterword

The coordinating team consists of six young professionals from Chinese civil society organisations, with diverse work experience and personal characteristics.

With the United Nations Agenda 21 as a reference point, the team initiated a review of a range of sustainable development issues by 20 lead authors. Due to lack of resources and sufficient expertise, we were not able to cover all important aspects of sustainable development. However this report still provides a relatively wholistic picture of China's sustainable development during the period 1992-2011. Because all authors participated in the report as independent professionals, the views in the report represent their personal opinions only.

This report is a milestone for China's civil society movement as Civil Society Organisations (CSOs) can now express their voice effectively both in the national and international arena. At the 1992 Rio Earth Summit, there were no participants from Chinese CSOs. Chinese civil society, particularly environmental CSOs, experienced dramatic development during the 1990s, and 12 grass-root CSOs attended the Earth Summit in Johannesburg in 2002. Now that another decade has passed, the growth of Chinese CSOs can help inspire the debate on China's role in sustainable development in the global context through the publishing of this report.

The report was initiated by a group of environment CSOs and the majority of authors are from an environmental rather than social or economics background. The framework of the report indicates that the majority of chapters relate to resources and environment issue. How to integrate other significant social and economic issues such as population, urbanisation, education and development in areas with ethnic populations, provides an opportunity for future improvement of the report.

The coordinating team want to thank all individuals and groups involved with the report for their understanding, support and trust. Appreciation should also go to authors who contributed their time and uphold the principles and spirit of the report. Their professional understanding and devotion enrich the heart and soul of this report. Thank you to all the people interviewed by the authors. The interviewees' contribution makes the report a comprehensive dialogue on sustainable development from a range of stakeholders. We also want to thank report reviewers, the initiating organisations and funding providers.

We hope that this report can advance the communication and discussion of sustainable development between China's CSOs and other stakeholders both in China and internationally.

Thank you!
谢谢！

The Coordinating Team
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Joint Statement of Initiative

Six organisations jointly initiated the project, 'China Going Green? A civil society review of 20 years of sustainable development'. Those organisations are Greenovation Hub, Shanshui Conservation Centre, Institute for Environment and Development, Friends of Nature, Institute of Public and Environmental Affairs, and the China Association for NGO Cooperation.

Each initiating organisation participated with the objective of providing a perspective from civil society to: review China's sustainable development pathway over the past 20 years in its economic, social and environment aspects; identify progress and challenges; facilitate inter-organisational sharing and cooperation within civil society; and incorporate citizens perceptions of sustainable development.

Each initiating organization acknowledges the following content and principles of the initiative:

- Independent and multi-stakeholder views, reflecting the voice and observations of civil society
- Reference to the United Nations'sustainable development goals, examining China's circumstances from a global perspective
- Critically review China's progress, supported by case studies and stakeholder comments
- Analysis based on solid evidence, with clear and accurate references
- Showcase the expertise and contribution of Chinese civil society

We hereby declare to share and fully implement the initiative.

Initiating Organisations are :



道和环境与发展研究所
Institute for Environment and Development



创绿中心
GREENOVATION:HUB

IPE



公众环境研究中心
Institute of Public & Environmental Affairs

SHAN SHUI
山水
自然保护中心
Conservation Center



自然之友
FRIENDS OF NATURE

This report provides a perspective from China's non-government organizations, with reviews and assessment of China's progress toward sustainable development since the 1992 Rio Earth Summit as well prospects for the future. China's success over the past 20 years has been remarkable. There remain, however, numerous challenges that China must overcome. China as a country is adept at learning, studying its own experiences as well as strengths and best practice from around the world. We believe that continual reform and innovation is the essence of sustainable development. The maturation and development of China's NGOs is one of the driving forces behind China's sustainable development, and is an important element of a mature society.

YANG Fuqiang, Senior Advisor on Climate Change, Energy and Environment of Natural Resources Defense Council's China Program

The contribution of non-government organizations is essential to achieving sustainable development in China. This report presents an snapshot of that contribution. While some attempts are still at the preliminary stage, most have failed due to fundamental problems . However, under existing conditions positive achievements have been made, even if only baby steps. We believe that the next 20 years will see further improvements. With this in mind, and with a desire to share our experiences, we hope that more people will be empowered to participate in sustainable development.

LU Zhi, Director of ShanShui Conservation Center, Executive Director of Center for Nature and Society of Peking University, Professor of Conservation Biology

If you would like to request for the full report, please contact Climate Change Programme Officer, Institute for Environment and Development Ms XU Jiayi : jiayi.xu@ied.cn