



**China Council for International Cooperation on Environment and
Development (CCICED)**

Environment and Society

CCICED Issues Paper

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I. INTRODUCTION

This year marks the start of new leadership for China's government, and the mid-point of the 12th Five Year Plan for social and economic development. Indicators point to China being able to meet its ambitious GDP goals for a 'moderately well off society' by 2020. There will be substantial improvement towards education, and some health and other social development goals. And China will continue along its dramatic path towards rapid urbanization. Yet despite bold development plans, China is caught in a serious situation of environmental challenge, as the smog situation in many cities revealed this year. It is a challenge of governance and therefore of government at national and local levels, since it has the potential to destabilize development plans and their outcomes, to undermine confidence and trust on the part of citizens, to affect quality of life at a time of rising expectations, and to degrade ecological services needed for society to thrive.

Substantial investment on environmental protection has already taken place¹ but still not enough to turn the curve towards consistent environmental improvement. At the same time, emerging pressures from both new and existing types of development, climate change, and rising domestic consumption are setting off new alarm bells. In particular, institutional and management strengthening for a sustainable relationship between the natural environment and society have not kept up with the pace of economic growth and development.

China has made important technological and managerial strides towards new solutions for environment and development, many of which will become very important in the middle term, between 2015 and 2030. Even more significant, however, is what remains to be done for creating a satisfactory relationship between environment and society within China, and in the country's international relationships.

In November 2012 at the CPC 18th Party Congress, the idea of Ecological Civilization was incorporated into the meeting report and enshrined into the newly revised Constitution of the Party, and at the same time accelerated action for environmental improvement was called for.² In March 2013 at the National People's Congress renewal of government, these points were again emphasized. Thus China is now at an important crossroads along the path towards sustainable development.

How can Chinese society move towards becoming one that has a deep respect for nature and ecological systems, while fully meeting human needs? This is the fundamental question driving the idea of Ecological Civilization, now placed as one of the five most

¹ For examples of progress on environmental protection see the Ministry of Environmental Protection. *2012 Report on the State of the Environment Report in China*, and China Forum of Environmental Journalists. *China Environment Yearbook 2012*.

² See Meng Si. 2012. *An Insight into the Green Vocabulary of the Chinese Communist Party*. in china dialogue (<https://www.chinadialogue.net/article/show/single/en/5339>) for an explanation of various significant environment and development terms including Ecological Civilization; also see the CCICED 2008 Issues Paper. *Environment and Development for a Harmonious Society*. 26 pp.

important policy areas for the country (along with social progress, economic progress, political progress and culture). Ecological Civilization is part of the larger vision for China's future. This larger vision promoted by President Xi Jinping is the 'China Dream': for Chinese society, especially its younger members, to rejuvenate the nation along the lines of *socialism with Chinese characteristics*.

According to the China watcher Robert Lawrence Kuhn, the Dream *has four parts: strong China (economically, politically, diplomatically, scientifically, and militarily); Civilized China (equity and fairness, rich culture, high morals); Harmonious China (amity among social classes); Beautiful China (healthy environment, low pollution)*.³ Another view, with apparently strong support in China, is from Peggy Liu, co-founder of the NGO JUCCE⁴ established to address the sustainability aspects of the Chinese Dream. As she indicates,

*China's middle class will grow from 300 million today to 800 million by 2025 and the country could shift from 'made in China' status to 'consumed in China'...The China dream realigns success with a healthy and fulfilling way of life — living more, rather than just having more. It promotes a sustainable lifestyle, but is not explicitly green...For China, this is no time for incrementalism. It needs to steer the emerging middle class to greener pastures before they develop the unsustainable tastes and habits of the western middle classes...China is unique because the government can help push behaviour change with local policies. The China dream offers a new model of prosperity that can spark sustainable consumerism in countries around the world.*⁵

Unquestionably, people's behavior and perhaps their values are being drastically reshaped by new needs and aspirations as China transitions into a consumer-oriented largely urban society with a rising middle class and citizens well-connected via social media. These observations suggest that even as transformative structural changes occur in China's economy, it is social change that will require ever more attention.

By comparison to extensive efforts over the past two decades to examine environment and economy relationships, fewer CCICED studies have focused on social and environmental linkages, even though many of the CCICED research teams have made socially relevant recommendations such as the need for greater public participation in environmental decisions. Therefore, it is timely for CCICED to examine how social change will influence environmental progress, and how environmental considerations are likely to influence social development and progress.

The 2013 research studies examine how social development might improve environmental protection, contribute to improved green development and meet expectations for China's Ecological Civilization. The studies also consider the other side of the relationship—how improvements in environment and development can enhance China's social development and related matters such as implementation of the rule of law,

³<https://globalbalita.com/2013/06/12/what-exactly-is-the-china-dream/>

⁴<http://jucce.org/chinadream>

⁵Peggy Liu. Guardian Professional Network. 13 June 2012. *China Dream: a Lifestyle Movement with Sustainability at Its Heart*. <http://www.theguardian.com/sustainable-business/china-dream-sustainable-living-behaviour-change/print>

health of people, and overall quality of life for citizens. The studies include two task forces (TF) and three special policy studies (SPS):

- China Environmental Protection and Social Development TF.
- Sustainable Consumption and Green Development TF.
- Media and Public Participation Policies on Promoting China's Green Development SPS.
- Corporate Social Responsibility in Green Development in China SPS.
- Promoting Urban Green Travel SPS.

This Issues Paper⁶ tackles the overarching 2013 CCICED AGM theme of Environment and Society. Much has been written on this topic, with many controversies, including Malthusian views on population growth, the 'Tragedy of the Commons', the 'Environmental Kuznets Curve', and views about human impacts on climate change. Environment and Society is the basis of a variety of discipline and interdisciplinary fields including environmental ethics, environmental health, human ecology, ecological anthropology, and human geography, to name but a few. There are many interesting compilations⁷ including books on environmental history⁸ and much has been written on China and other parts of Asia⁹. However, unifying theory on environment and society is lacking—and perhaps always will be—since the topic is so wide-ranging in scope.

II. INTERNATIONAL SITUATION IN 2013

With the world's economy still in a recovery phase, back-pedaling on environmental ambitions and commitments might seem almost inevitable. However China has expanded its efforts—not only in fields such as water and sanitation improvements, but also for investment in environmental technology innovation and in many other environmental fields—in the expectation that transformative change can occur for both environment and economy, situating China well for building future competitiveness and for achieving better environmental conditions.

⁶The Issues Paper is prepared each year by the CCICED Chief Advisors, Arthur Hanson and Shen Guofang with inputs from the Chief Advisors Group and from others.

⁷See, for example, John Walsh. 2007. *Encyclopedia of Environment and Society*. Sage Publications.5 Volume Set, 2105 pp.; Paul Robbins, John Hintz, and Sarah A. Moore. 2010. *Environment and Society: A Critical Introduction*. Wiley-Blackwell.312 pp.; Stewart Barr. 2008. *Environment and Society: Citizens, Culture and Nature*. Ashgate Studies in Environmental Policy and Practice.

⁸Jared Diamond. 2005. *Collapse: How Societies Choose to Fail or Succeed*. Penguin Books.575 pp.; A.W. Crosby. 2004. *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*.(Studies in Environment and History).Cambridge University Press.390 pp.; Clive Ponting. 2007. *A New Green History of the World: The Environment and the Collapse of Great Civilizations*. Penguin Books.464 pp.

⁹R.B. Marks. 2011. *China: Its Environment and History*. Rowman& Littlefield.464 pp.; Bryan Tilt. 2009. *The Struggle for Sustainability in Rural China: Environmental Values and Civil Society*. Columbia University Press.216 pp.; Mark Elvin. 2006. *The Retreat of the Elephants: An Environmental History of China*. Yale University Press.592 pp.; Association of Academies of Sciences in Asia (AASA). 2011. *Towards a Sustainable Asia. The Cultural Perspectives*. Science Press Beijing and Springer.93 pp.; Ma Jianbo. 2013. *The Land Development Game in China*. Lexington Books.267 pp.; Michael J. Hathaway. 2013. *Environmental Winds - Making the Global in Southwest China*. University of California Press. 272 pp.

Yet China has garnered considerable international attention with the unprecedented level of smog in a number of cities from January 2013 onward, leading to a considerable outpouring of public concern and the focused attention of the central government, with a ten-point national action plan on this subject issued in September 2013.¹⁰ The smog problem and high levels of awareness about the dangers of PM2.5 crossed a certain line in the bond of trust between the government and citizens in China. This one problem has become symbolic of much broader environmental challenge within China. It is affecting international perceptions of China's efforts on environment and development.

In many parts of the world, despite economic turmoil, there are some grounds for optimism. In many OECD countries, a quiet green revolution is underway as new technologies mature and is entering into many sectors, including more types of hybrid and electrical vehicles, emissions reduction efforts in ocean shipping, power grids capable of accepting more inputs from renewable energy sources, green buildings, and more consumer products with reduced life cycle environmental costs. In Europe¹¹ and the USA¹² pollution reduction progress continues. But there are important exceptions.

Internationally, greenhouse gas reduction has not seen hoped for breakthroughs, and the slow progress on adoption of carbon tax and carbon emissions trading schemes has been problematic.¹³ As noted recently by the OECD Secretary-General,¹⁴ there is a need for much greater action on pricing carbon in order to achieve zero net emissions from fossil fuels quickly. The arguments relate directly to accommodating 2-3 billion more people on our planet and to protecting the world's ecology. In addition he has noted immediately pressing needs related to local impacts, for example in China on health and environment. The mounting insurance bills and social costs associated with weather disasters and other signs of climate extremes are sending a strong signal in a number of countries.

Globally, preparations for the post-2015 sustainable development agenda are addressing a strengthened focus on poverty reduction and an inclusive approach to sustainable development especially for the poorest, with integrated approaches to environment, economy and social aspects, and with sustainable patterns of consumption and production, as noted in the report of the UN High Level Panel on the Post-2015 Development Agenda.¹⁵ This general approach is also endorsed by the G20 in its development priorities. In addition, the G20 believes an agreed outcome "with legal force" applicable for all Parties to the Climate Change Convention COP should be in place by 2015. The G20 continue to place major emphasis on inclusive green growth focused on energy efficiency,

¹⁰http://english.mep.gov.cn/News_service/infocus/201309/t20130924_260707.htm

¹¹EEA. 2013. *Towards a Green Economy in Europe – EU Environmental Policy Targets and Objectives 2010 – 2050*. European Environment Agency. <http://www.eea.europa.eu/publications/towards-a-green-economy-in-europe>

¹²<http://science.house.gov/hearing/subcommittee-environment-state-environment-evaluating-progress-and-priorities>

¹³OECD. 2013. *Climate and Carbon: Aligning Prices and Policies*. <http://www.oecd.org/environment/climate-carbon.htm>

¹⁴ Lecture by Mr. Angel Gurría, London, 9 October 2013. *The Climate Challenge: Achieving Zero Emissions*. <http://www.oecd.org/env/the-climate-challenge-achieving-zero-emissions.htm>

¹⁵*A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*. <http://www.post2015hlp.org/wp-content/uploads/2013/05/UN-Report.pdf>

clean energy technologies and energy security, with additional effort towards phasing out of fossil fuel subsidies.¹⁶ A Green Growth Action Alliance has started to bring private investment into the G20 activities.¹⁷ The 2013 Intergovernmental Panel on Climate Change (IPCC) report more definitively than ever has set out warnings regarding future trajectories if sufficient action is not taken.¹⁸

III. A NEW ERA IN CHINA BUT LEGACY ISSUES REMAIN

1. Ecological Civilization, Green Development and Environmental Protection

Ecological Civilization is a phrase uniquely Chinese but it has garnered considerable international interest since being mainstreamed into policy discussions this past year. It is discussed widely, with various major conferences¹⁹ in China on the subject, and with research and pilot activities. As noted by Professor Shen Guofang²⁰, it is a term that *has its own rich and in-depth meanings, that is a genuine innovation of the Chinese Government and for which there is no precedent in other countries to pay so high attention to ecological conservation and environmental protection*. It is indeed an aspirational goal, but there are already efforts underway to understand how its implementation can occur and how progress towards Ecological Civilization might be measured. Ecological Civilization might be considered a top tier policy subject, even though the thoughts and actions can be generated and carried out at any level within society and at local as well as national levels of government.

In his speeches, President Xi Jinping has noted some fundamental observations for building Ecological Civilization. Most importantly, that *economic development determines people's living standard while environmental quality is a prerequisite for man's survival*. The following points provide guidance on key requirements.²¹

- *Respect nature, accommodate nature and protect nature.*
- *Give priority to protection and strive for economic development in the process of environmental protection and protect the environment in the course of economic development.*
- *We must firmly uphold the concept of ecological red line...and prepare a comprehensive scheme for maintaining the ecological red line and pay attention to enforcement.*

¹⁶ Saint Petersburg G20 Leaders Summit 5-6 September 2013. <http://climate-l.iisd.org/news/g20-leaders-adopt-declaration-action-plan/>

¹⁷ <http://www.weforum.org/reports/green-growth-action-alliance-progress-report-first-year-catalysing-private-investment>

¹⁸ IPCC. September 2013. *Climate Change 2013. The Physical Science Basis*. <http://www.ipcc.ch/report/ar5/wg1/#.UISVDxaQsqg>

¹⁹ A prominent example is the Eco-Forum Global Annual Conference held in Guiyang City, July 2013. The CCICED 2013 Roundtable Forum was held in conjunction with this meeting.

²⁰ *Importance shall be attached to the English translation of Sheng Tai Wen Ming*. CCICED Chinese Chief Advisor, December 2012.

²¹ The observations are prepared by MEP Minister Zhou Shengxian in an article published on the MEP website, 9 February 2013, *Towards the New Era of Ecological Civilization—Studying the Important Statement by Comrade Xi Jinping on the Building of Ecological Civilization*. http://english.mep.gov.cn/Ministers/Activities/201309/t20130917_260331.htm

- *Explore a new path to environmental protection...learn from developed countries on pollution control...make innovation based on China's national conditions and stage of development and employ new thoughts and methods to conduct comprehensive treatment.*
- *Focusing on prominent environmental problems harming public health...achieve phased results and gradually improve environmental quality...we must also realize this will be a prolonged battle.*
- *Never should we take GDP growth as the biggest achievement...indicators on ecological civilization such as resource consumption, environmental damage and ecological benefits should be included in the social development assessment system and be given more weight.*
- *People who have made blind decisions without regard for the environment and caused serious consequences will be held responsible and even for a lifetime.*

It is remarkable how quickly the concept of Ecological Civilization has entered the vocabulary of China's environment and development. It has provided a strengthened opportunity for policy coordination; and the top political attention being given has already resulted in efforts throughout government and society to take this new idea seriously. Within China and internationally there is a sense that Ecological Civilization is an important opportunity for China to develop a unique pathway for development of high value to its own society and to people elsewhere.

There are two other levels of environment and development action that will help to fulfill expectations for Ecological Civilization.²² One level is the wide variety of sectoral actions and governance actions that will enable and enhance China's efforts for green development. These can be linked to global green economy, green growth and sustainable development. This will require enormous effort and fundamental transformations in China's investment directions, urbanization and rural development over the coming decades. Green development is the overarching theme of CCICED for its work during Phase 5.

At yet another level, but of course linked to Ecological Civilization and to green development, is the subject matter of an environmental protection agency and other relevant bodies. China's major efforts to date will require a more integrated approach tied to airsheds and watersheds, urban agglomerations, industrial sectors, and further improvements in protection for ecological services. It will be essential to stop further degradation and to address legacy issues related to soil pollution, marine and coastal development, and other pressing matters. For some matters, emergency action is needed, for example on regional air pollution for many parts of China. Transformative change related to bringing about a 'New Path for Environmental Protection'²³ has started but is still inadequate in terms of the tools, capacity and, likely, the financing needed to bring about desired results. Inconsistent alignment among various development interests continues to hold back robust environmental protection progress.

²² The three levels, Ecological Civilization, Green Development, and Environmental Protection, highlight different points of emphasis regarding policies and implementation actions. Further explanation is provided in a short paper by Arthur Hanson. January 2013. *China and Ecological Civilization*. 7 pp. CCICED.

²³ http://www.cciced.net/encciced/event/AGM_1/2011agm/speeches2011/201205/P020120524356500627645.pdf

2. China at a Crossroads for a New Environment and Society Relationship

Society within China is already at the point of achieving ‘moderately well off’ financial and other goals²⁴ by 2020 or before. For those areas in China not already at this stage of economic achievement, there is expanded economic development producing the very high GDP growth levels seen by richer coastal provinces until 2008. In some poorer areas with fragile ecosystems the accelerated pace of environmental impacts such as groundwater depletion and grassland degradation is troubling. However there are many efforts and progress to reconstruct damaged ecosystems and to create new livelihoods based on tourism or other sectors in provinces such as Guizhou, Xinjiang and Shaanxi.

Within the richer provinces, economic growth rates are falling, generally to below 8% but from much larger bases than 5 or 10 years ago. Yet from an environmental point of view, even these lower rates may still not be sustainable, as environmental issues are not only related to economic growth rate and scale, but also related to industrial structure, especially rising domestic consumption and lifestyle changes of people. Fortunately, substantial improvement towards education, health care access and other social development efforts are helping to improve economic efforts. Environmental quality has become a major concern since even when targets for pollution reduction are achieved, environmental quality does not improve due to complexity in the environmental pollution situation.

Political support is well enunciated but pathways for success are not well understood or sufficiently implemented, and mechanisms to reduce challenges and policy effectiveness continue to be blocked by special interests, slow movement on enforcement, implementation of important mechanisms and policies such as environmental taxation, subsidy removal, pricing and other economic incentive systems, plus other problems.

In many parts of the China social tensions are on the rise, in part due to perceptions and worries about development directions, and sometimes mixed with other concerns such as local corruption and wealth inequalities. The dramatic increase in social networking and the use of improved electronic communications to highlight what are often legitimate local concerns on the part of citizens is a subject of worry for China’s government.

On the one hand, there are clear messages that the government wants to increase the participation of people in decisions affecting their quality of life, and in the supervision of government performance and project planning. As noted by President Xi, *Anyone who exercises power should serve the people, be accountable for the people and consciously accept supervision of the people.*²⁵ On the other hand, social stability continues to be a major concern, and so, for example, there have been recent efforts to put in place severe penalties for spreading of false information via the Internet.

²⁴ The indicators are described in Xu Xianchun. 2009. *The System of Xiaokang Indicators: a Framework to Measure China’s Progress*. Third OECD World Forum. Busan.9

pp.<http://www.oecd.org/site/progresskorea/44120516.pdf>

²⁵ http://news.xinhuanet.com/english/china/2013-01/22/c_132119843.htm

The right to know—and to use that knowledge constructively; and the need to ensure China’s continued effort to create new infrastructure and a modern society should be highly complementary objectives. However at present, it is still a struggle to achieve an optimum situation. China’s continued effort to create a scientifically and technologically advanced society provides a great opportunity to expand public inputs into development decisions, but there should not be an expectation that disputes will disappear. There is a need to build stronger risk assessment, dispute resolution mechanisms and environmental rights.

With the new government policy focus on stimulating domestic consumption, urgent action on Corporate Social Responsibility (CSR) and on improved safety and environmental standards for products, are needed. These will assist in reducing excessive and environmentally damaging consumption in government procurement, in business, and in household consumption. China is close to crossing some important ecological footprint thresholds on supplying its needs from resources within the country and perhaps globally.²⁶

Sustainable consumption is largely new territory for policy makers, and indeed for Chinese businesses and consumers. This topic presents a major opportunity for linking Ecological Civilization and green development to purchasing decisions of people, businesses and government, and requires a major focus on green market supply chains. This aspect also has important implications for China’s trade and *Going Out* efforts since sourcing of products beyond China’s borders will require greater attention to full life cycles of products and greater participation in various programs of international certification and green standards. Sustainable consumption should be considered a huge opportunity for green development and for building an Ecological Civilization.

Shifts in approach for environmental protection are urgently required, although difficult to accomplish in terms of demonstrating rapid improvements to environmental quality outcomes. Renewed emphasis has been placed on control of basic air, water and soil pollution. Yet even as progress is made on some issues, new problems emerge, for example, the extent of groundwater pollution, and the changing sources and complexities of air pollution. The unprecedented level of new investments on action plans provides the timing and opportunity to accelerate the transition to the new path of environmental protection, including solutions to the following questions. Will the new investment be efficiently and effectively managed to produce optimal results? Will potential co-benefits be proactively sought and optimized, for example to address greenhouse gases and to ensure public health is actually improved? Will long awaited changes to greater use of market-based instruments and green tax reform be implemented to the fullest extent?

The following issues quite clearly need to be dealt with, and might be considered as near-term and mid-term opportunities for the new administration.

²⁶http://www.footprintnetwork.org/images/article_uploads/China_Ecological_Footprint_2012.pdf

- The targets-based approach to environmental protection needs to be shifted to scientifically substantiated outcomes/improvements based on environmental quality, quality of life, environmental health, and ecosystem health criteria.
- Another shift should be from reliance on local efforts to greater emphasis on ecologically sound regional efforts (especially air, water and soil pollution).
- New opportunities are required for ‘development supervision by the people’; these need to be based on much greater information transparency and participatory approaches, and to be linked to the current drive to eliminate corrupt practices.
- Since environmental damage has reached severe levels and cumulative ecological debt continues to grow, the investment to achieve green development must grow very substantially, probably to 10% or more of GDP when all sources of expenditures are considered, and be based on technical, social and governance innovation and administration.

These points will be considered in more detail at a later point in this Issues Paper.

3. Social Factors and Transformative Environment and Development Shifts

Consideration of social factors generally is dominated by the following issues and subjects: people’s perceptions and values; ethics; rights and obligations; inequalities; individual and institutional behavior; vulnerability, risk and public safety; quality of life; environment and security in wars and in disasters; poverty reduction; access to livelihoods; access to social benefits; freedom of choice; and fulfillment of ‘needs and wants’. Governance is shaped by social factors, with special emphasis on stakeholder relationships, access to services, transparency in decision-making and performance, perceived levels of honesty and trust, quality of government performance, and freedom from corruption.

This daunting list perhaps explains why the relationship between environment and society remains fraught with difficulties. Also, why tensions exist—not only in China but in most other countries—when it comes to matters such as siting of waste incinerators, environmental health concerns from pollution, or access to natural resource use; and on mechanisms for participation in planning decisions and for fair treatment and resolution of environmental complaints. While there is not full agreement on any single unifying theory²⁷, it is certainly possible to sketch out many of the important components of the environment and society relationship, and to consider and identify actual linkages and feedback loops.

²⁷ Among various authors, Prof. Amartya Sen has produced perhaps the most significant theoretical concepts regarding social choice and other aspects of human development that are relevant to environment and society (see, for example, A. Sen. 2009. *The Idea of Justice*. The Belknap Press of Harvard University Press). Prof. Partha Dasgupta has examined the issues carefully in a related but distinctive way, for example, in *Human Well-Being and the Natural Environment*. Oxford University Press, Rev. ed. 2004. Combining theory and experience from various parts of the world, Jeffrey Sachs has played a particularly important role in the Millennium Development Goals, and has worked to highlight key approaches, for example in his 2008 book *Common Wealth: Economics for a Crowded Planet*. Penguin Press.

3.1. Social Development in China

Social development is an essential element for sustainable development. Within China this relationship has been subject to much study including China Agenda 21, the series of China Human Development Reports, and work by leading Chinese academies and universities. Box 1 lists some key achievements in Chinese social development.

Box 1. Some important Chinese social development achievements

- Reduced population growth rate.
- Success in poverty reduction and many aspects of rural development.
- Increased lifespan and better access to health care; improvements to the social security net.
- Improvement of quality of life and economic status of most citizens.

- China's *Opening Up*, the loosening of travel restrictions for Chinese to travel abroad for pleasure, business and education, and the recent emphasis on *Going Out*, sometimes coupled with development assistance.

- Relative political stability and other factors that have permitted rapid economic development.
- Education and training for both present and future opportunities.
- Massive job creation, and opportunities for rural and urban private sector enterprises.
- Transportation infrastructure and improved mobility within China for people and for goods.
- Public environmental infrastructure including water, sewage and waste management
- Relatively successful large-scale urbanization.
- Food security.
- Improvements in workplace safety.
- Disaster prevention and mitigation.

- Extensive and partially successful programs for strengthening ecosystem services (forest, grasslands, wetlands) with eco-compensation for rural residents.

Despite the considerable progress in social development over the past several decades, some very important challenges remain. Among them are the following:

- **Social management policies**
 - Adjustments to the One Child Policy.
 - Urban residency requirements (*hukou* household registration system).
 - Land ownership and usufructuary resource rights, especially in relation to rural residents and rural-urban migrants.
 - Implications of an aging population.
- **Social safety net**
 - Basic social security still limited.
 - Public health and access to health care improving but limited measures to deal with environmental health issues, workplace safety, and inadequate monitoring for many concerns.

- Education and training.
- Job security and insecurity.
- **Information management and institutional freedom**
 - State secrecy requirements.
 - State propaganda bureaucracy.
 - Release of information on incidents, development approval processes, environmental decision-making, etc.
 - Media and communications.
 - Social media expansion and wide usage for social and environmental matters.
 - Monitoring and control over civil society organizations; activities of philanthropic and charitable organizations, and role of local and national social and environmental organizations.

3.2. Social Factors and Environmental Improvements

Social factors generally are still not well understood in relation to Chinese efforts for environmental improvement. Internationally, the same might be said.

With China's great interest in building a harmonious society, there is a genuine need for deepening the public's knowledge of environmental science and for much greater transparency in decisions and accurate information on the state of the environment. These are prerequisites for improving public participation in development supervision, and also important in order to find out more from the public about future 'needs and wants' for a good quality of life. The emerging middle class in both cities and in rural areas is most important, for these are the people who may be most influential in creating the levels of consumption and type of lifestyle for a modern, or even post-modern China.

The transformative period ahead in China, with its many transitions such as rapid urbanization and introduction of new technologies, is likely to be messy with regard to social and environmental factors. Inequalities may persist, and possibly worsen in some ways. It cannot be presumed that sustainable consumption will unfold in a smooth way if governed by people's individual and household decisions alone. Already many people, particularly some in cities, are consuming energy and materials at very high levels. Along with many legitimate concerns about development impacts on the environment, there will be strong vested interests continuing to shape decisions locally and sometimes nationally towards their needs and concerns. NIMBY ('Not In My Backyard') campaigns will likely become more frequent, sometimes driven by perceived risks that may or may not be real. There also will be disputes for which no environmental consensus may be possible, for example, regarding large hydro dams.

These observations are cautionary notes about social and environmental relationships, and raise the question about what level of disagreements and dissent should be recognized as legitimate in a harmonious society? In many countries, including a number of western societies, but also countries such as South Korea, India, South Africa, Costa Rica, Brazil and Indonesia, the threshold for tolerating dissent within the society has become quite high on addressing environmental protection and development concerns.

There are a variety of internationally well-tested approaches for considering social and environmental needs in planning and management, as noted in Box 2. China is engaged in most if not all of these approaches but not necessarily in a systemic fashion.

Box 2. Social and environmental planning and management approaches

<p>Basic Mechanisms</p> <ul style="list-style-type: none">• Public Participation in Decision-making• Disclosure• Stakeholder engagement• Consultation processes• Freedom from harassment and retribution• Access to complaint processes, legal remedies• Social communication and media <p>Shared Responsibilities in Governance and Management</p> <ul style="list-style-type: none">• Corporate Social Responsibility (CSR)• Co-management and community-based management• Citizen-based science and monitoring• Reporting and control of illegal activities• Voluntary efforts for environmental protection <p>Planning and Assessment</p> <ul style="list-style-type: none">• Environmental and social impact assessment• Risk management and disaster planning• Integrated urban and rural regional planning• Zoning, including ecological functional zoning• Red lining for food security and for ecological purposes <p>Sustainable consumption promotion and analysis</p> <ul style="list-style-type: none">• Shifts in consumer behavior via incentives, laws and voluntary action• Life cycle analysis of energy and material• Green market supply chains• Green certification

3.3. Successes and Challenges in Linking Environment and Social Development

It may be too early to say that the glass is half full with respect to improvements on addressing environment and social development issues in China. But certainly there are some very good results of initiatives in locations throughout the country. Yet there appear to be systemic issues that make it very difficult to achieve progress on some types of problems. Several examples are provided below.

Examples of successful interventions:

- Capacity of senior leaders to provide a coherent rationale and approach linking environment and social considerations, including Ecological Civilization, scientific development, low carbon economy.

- Circular Economy with changes to behavior of individuals, units of government, communities and enterprises towards resource conserving practices, and with major transformation of global recycling.
- Ecological Construction and Eco-compensation initiatives on reforestation and to a lesser extent for wetland reconstruction and grassland protection. Provision of social benefits to both local farmers and downstream inhabitants, with some biodiversity protection and improvement of upper watersheds and water basin resilience.
- Natural disaster planning and early warning action to reduce human injury and death toll from extreme weather events such as typhoons.
- Introduction of environmental amenities and other quality of life improvements in major cities, including green zones, better public transportation, waterway cleanups, etc., in some cities.
- Programs for cleaner rural energy and installation of biogas stoves and other means to improve indoor air quality in rural homes.

Examples of very challenging problems:

- Environmental enforcement programs have failed for a variety of reasons, but often because they have not provided sufficient incentive for enterprises to shift behavior.
- Programs working at cross-purposes, for example, incentives to purchase private automobiles and to use them extensively, while at the same time having inadequate measures to mitigate or contain the resulting smog and other environmental and social impacts.
- Integrated action plans to address environmental management have been put into place in river basins and in some marine subregions such as the Bohai Sea. However they have not curbed unsustainable practices, leading to a variety of serious pollution incidents (e.g., red tides in coastal areas, green algae in major lakes, loss of important species, such as dolphins in the Yangtze River).
- More efforts are needed to address the variety of problems nationwide related to soil pollution (full compensation, timely restoration).
- Emerging signs of chronic health and environment problems facing the public throughout China.
- Failure to alter sufficiently the ‘pollute first, cleanup later’ syndrome linked to very high rates of GDP growth.
- Limited success or effort to equip the public with programs providing necessary information and opportunities to take voluntary action for environmental improvements and for sustainable consumption.

3.4. Opportunities Ahead for China

A solid mix of opportunities for creating a new Environment and Society relationship exists, as noted in Box 3.

Box 3. Opportunities for strengthening links between Chinese social development and Ecological Civilization, green development and environmental protection

- Setting an overall vision for Ecological Civilization and building a relationship to social development aspirations that have been defined for the 12th FYP and beyond.
- Setting specific objectives for green development that can be related to social development sectors including public health, primary and secondary education, job training, and in major processes involving transformative change for people's perception and behavior, especially urbanization and displacement of rural communities.
- Strengthening public supervision role in overall development directions and for specific programs and projects, including addressing matters such as anti-corruption, poor planning, environment and social monitoring of projects, unjust practices by officials nationally or locally in the design and implementation of new initiatives.
- Further opening of public input channels for dealing with environmental and social impacts of development and to have improved mechanisms for addressing public discourse. Social media will continue to grow in significance in terms of their role for both environment and social development matters.
- Creating a more transparent information sharing system for environment and social information. The models of environmental and social information sharing in the USA and many other OECD countries can be examined for relevance to China's situation. There is a need for further relaxation of constraints placed upon Chinese media sources in their reporting of environment and social concerns. On occasion, they have shown a high level of competency in bringing forward some important environmental incidences and issues.
- Implementing better enabling measures for the creation and operation of Chinese civil society organizations that place a major emphasis on environment and social development concerns. These will take many forms, some with very specific objectives, others more general in nature. The process will be aided by responsible linkages and cooperation with international NGOs and professional organizations.
- Fostering CSR practices on the part of Chinese SOEs and private sector enterprises (including SMEs) whether their operations are in China, or include activities abroad through ODI and China's Going Out policy. This effort can be enhanced through enabling measures in laws and regulations, and through various incentives. However, CSR requires direct commitments by enterprises and their associations that should be done on a voluntary basis.
- Creating a national framework of certification and other measures such as product and production standards designed to promote sustainable consumption by households, and sustainable procurement practices by public institutions (hospitals, universities), government bodies, and by enterprises of all sorts. Although such efforts are underway within China, they are still nascent and not well backed up by governmental effort.
- Utilizing banks or other sources of credit as allies to help screen out initiatives inside and outside of China that are likely to have undesirable social or environmental consequences.
- Utilizing environmental improvements to a greater extent in poverty reduction programs, and making these efforts compatible with international post-2015 sustainable development goals, if these prove to be compatible with Chinese interests.

IV. POLICY AND IMPLEMENTATION ISSUES

1. Managing gaps of rising expectations, environmental perceptions and the reality of environmental conditions and problems in China. Even if China is able to significantly reduce the extent of such visible problems as smog and water pollution during the coming 5 years, which should be possible and certainly desirable, there is likely to be continued public discontent regarding environmental quality and livability within cities. There will be more NIMBY cases, reactions to inevitable environmental accidents and changing environmental conditions, and on-going concern about public health and environmental safety. No matter how much is invested in public education and awareness-raising, significant differences of perception will remain. Perceptual and conceptual differences in approach to environment are a normal part of the human condition as shaped by culture, strongly held values, history and past experiences and various other factors including income level and views about the governance system. For many if not most environmental matters there will be public views split into pro-development, development with restraints and safeguards, and anti-development. Many other countries have successfully dealt with such splits.

For development on the level of complexity, scale and rapidity in China there is no other country in the world that can serve as a comprehensive model for what will be required in the coming two decades and beyond. For this reason it is important for China to invest in an approach that will be unique but that draws upon experience from elsewhere. Ecological Civilization provides the opportunity to build a new approach that is indeed capable of dealing with the inevitable gaps that will persist regarding public understanding of environment and development issues, and the scientific, economic and other expert views shaping policy decisions.

Built into this new approach must be a larger window for the public into sometimes very detailed knowledge of issues, and more encouragement of peoples' participation in decision processes and follow-up monitoring. There is much to be done in the way of environmental education to ensure people are capable of understanding and participating. But given that much of the perceptual problem is tied up in trust-building and in raising credibility of both government and enterprises, there must be considerable tolerance of divergent views; and with dialogue efforts that are seen to be productive by most people.

Many positive environmental actions beneficial to health and quality of life, and to protection of ecological systems and services, are possible. Determining the extent of investment needed should be well backed up by credible analysis in terms that are acceptable to stakeholders and to the public at large. This is a difficult task, as seen in many other countries trying, for example, to come to grips with climate change, or urban development, and where balancing public and private interests appear to clash, especially in the short term. Strong and consistent national approaches such as the Scandinavian countries have developed and applied provide good examples to consider.

2. Balancing traditional Chinese values, contemporary social values in China, and outside influences in seeking progress towards Ecological Civilization, green development and environmental protection. A society changing as fast as China's has

during the past 3 decades, demands a remarkable level of resilience, but also can be expected to seek a reasonable balance in what it will desire from old and new. In its opening up, China has taken on board many of the most environmentally damaging approaches to development from abroad, including transportation infrastructure oriented to suburbanization; the tools of advertising that promote overconsumption; and many industrial enterprises that have not sufficiently respected nature or the health of people. On the other hand, the technology revolution in China has promoted communications and other innovation technologies in unprecedented ways. China also has joined many international accords regarding environment and development and these will help to shape future national action for sustainable development within China.

What is the right balance among these often-competing interests from today to 2020, 2030, and to 2050? The answers to this question are still fragmented, and tilted in favour of strong vested interests both within China and outside that seek either stability of existing but ultimately unsustainable practices such as rising fossil fuel use, or look for dramatically expanding markets for products such as automobiles and other consumer goods following western development patterns. As a result, putting it bluntly, what will differentiate a consumer in Shanghai in 2030 from one in Paris or Houston, or São Paulo?

The ideals from past centuries, including Confucian philosophy will undoubtedly be useful in shaping an improved environment and society relationships, for example, in the period to 2020 for the attainment of a Xiaokang Society. However, it is the shaping of contemporary social values through urban in-migration, education and access to social services, livelihood shifts, and the broadening travel and experience of Chinese citizens as they become wealthier that will likely play a crucial role.

3. Making environment and development governance more inclusive, effective and efficient. It has been pointed out that China's environmental crisis is actually a crisis of governance, since it reflects a falling trust level by people concerning whether government on its own can actually deliver satisfactory improvements in environmental conditions. Governance, of course, is a term that reflects relationships among stakeholders to address problems and therefore goes beyond the action of government. Thus improvement in governance must rely on mutual trust-building and people's participation, greater sharing of responsibilities, for example between government and enterprises, better value for investment in environmental protection and restoration, and efficiency in the sense of not unnecessarily slowing development as a consequence of environmental improvement. None of these points are new, but they are taking on greater significance with the growing levels of both problems and actions to alleviate them.

Several topics stand out for concerted effort. More attention is needed on how to implement integrative approaches to address cross-sectoral conflict, and to optimize among varying development objectives. Solving the critical issue of local-national disconnects about the priority given to environmental matters compared to economic development is essential. There is no doubt that the concern over corruption and other issues of "clean government" are important regarding environmental matters. Many of these issues are linked to the current model of land transfers associated with urbanization. Environmental impact assessments and other planning efforts for regional development

and projects must be done with considerably more transparency and with mechanisms that genuinely allow for peoples' supervision. In the design of new green development, exemplary methods are required in order to build trust. What constitutes exemplary methods is a topic to be worked out jointly by stakeholders.

4. Linking transformative economic and social structural change with transformative environment action. The emphasis on China's economic shift towards tertiary sector dominance, and domestic consumption, plus the accelerated pace of urbanization are very important points. However, they are not fully linked with the transformative change now underway on environmental protection mechanisms, and very likely also not to some aspects of green development.

China's environmental protection is largely based on the feature of strong government intervention, and still does not fully embrace a market-based approach, while the current incomplete policy implementation and inadequate enforcement of command and control measures, throw confusion into the transformative economic and social reforms. Genuine progress towards significant improvement in environmental quality and quality of life will require moving environmental protection to an intersecting track with economic and social structural changes. This point has been made by CCICED a number of times in recent years, for example in its work on green economy and on low carbon industrialization in 2011, and in several studies reported in 2012.

Some good signals have been provided by President Xi Jinping and by Premier Li Keqiang, and in the New Path for Environmental Protection enunciated by MEP Minister Zhou Shengxian. The tasks, however, are complex and appear difficult to be brought forward in a comprehensive way. They include, among others the following key areas: fundamental green tax and subsidy reform; widespread implementation of CSR among industries, the energy sector, the financial sector and other sectors such as information technology, mineral development, tourism and agri-business; a robust approach to green market supply chains including greater effort to build credible certification and effective means of green public procurement; and better options for environmentally-sound consumer choices. Some of these points are amplified in the issues noted below.

5. Implementing comprehensive fiscal and tax reform for Ecological Civilization, green development and environmental protection. Although such reforms have been proposed to China by many groups within China, and by some international organizations such as the World Bank, Asian Development Bank, OECD, and by CCICED, implementation has been slow. The moment never appears to be quite right. Now the stakes are higher. In part this is a result of better understanding of problems, and the recognition that incentives are required for action. Furthermore, the costs of inaction in terms of health and loss of ecological services are being measured more carefully. As well, there are questions about the efficiency and effectiveness of traditional regulatory provisions that rely upon expensive command and control laws, even though these are still needed.

The most important new point to emphasize is the great opportunity to expand benefits of fiscal and tax reform as a result of dealing with all three aspects, Ecological Civilization,

green development and environmental protection in a common framework where there can be co-benefits and greater efficiency using such measures. For example, if there were a shift away from sale and conversion of land as a means of funding current expenditures by city governments, there would be fewer cases of overdevelopment and less suburban expansion, resulting in lower pollution and more habitable cities. If taxes shape purchasing decisions by consumers, they may buy fewer but more durable items and thereby reduce their ecological footprint. Fiscal and tax reform can be designed to address both social development and environmental protection objectives, for example, those related to public health and air pollution reduction.

The highest priorities should include environmental objectives where measurable environmental quality improvements are possible: fiscal and tax measures directly linked to air, water and soil pollution; a strengthened, comprehensive and long-term eco-compensation program of direct benefit to rural people and the environment locally and elsewhere; environmental tax reform to price carbon appropriately and coupled with additional efforts for carbon emissions trading within China; more appropriate pricing of ecological goods and services; reform of urban taxation policy to encourage a move away from large scale land appropriation; and continued efforts to establish price structures for both manufactured goods and resource structures that fully account for externalities. All these measures require renewed effort to develop an improved system of green accounting, and improved efforts to develop a reasonable benefit/cost approach to environmental reform that takes into account environmental public health and ecosystem goods and services.

6. Using the educational system and public awareness raising to move Chinese society towards actions compatible with environmental and social harmony while still enhancing prosperity. Perhaps it is correct to assume that China is somewhat unique in its capacity to shape views towards sustainable consumption, and other aspects of its environment and society relationship through better use of formal and informal education, and via both traditional and new media mechanisms. However, for a society that is now well exposed to many sources and types of advertising, and to policies that encourage increased consumption, at best there will be many contradictions in the effort to shape lifestyles. Furthermore, knowledge alone is not enough to ensure that green choices will be made. Thus, while improved awareness and education are essential, they cannot be treated as either a responsibility that is for government alone, or even by government plus business. The situation really does demand a ‘movement’ in which citizens become the critical part of the solution, individually in their lifestyle choices, through their work place, and through the various organizations in which they participate.

How such movements can be fostered is, of course, a matter of debate. One of the most interesting examples is ‘Earth Day’, particularly in its earlier years from 1969-75. This movement had its roots in universities and with a handful of politicians, but quickly grew to encompass public and private schools, and with participation from the media, businesses and many others drawn from all sectors.²⁸ Within a few years it became a

²⁸ Adam Rome. 2013. *The Genius of Earth Day: How a 1970 Teach-In Unexpectedly Made the First Green Generation*. Hill and Wang. 368 pp.

global event.

In China and some other countries such as the United Kingdom, perhaps one of the most prominent and relevant movements in recent times has been the embrace of Low Carbon Economy as a new and rather integrative approach to energy, climate change, consumption and lifestyle concerns. It has spread through a combination of public awareness and education by governments, mayors of cities, scientists, some enterprises, media and “opinion leaders”. Yet in most places, it has slammed into institutional barriers that have not yielded to the new movement. Andrews-Speed has noted that *significant or even radical institutional change across the polity, economy, and society in China will be required in order to accelerate the transition to a low carbon economy.*²⁹The point to be made is that for education and awareness-induced movements to actually create substantive change in conditions, behavior and perhaps values in society, there must be concurrent institutional shifts, better policies and improved coordination.

The rise of social media and the global linkages possible via the Internet are dramatically changing the landscape of educational practices and awareness raising. China has shown itself to be very proactive in the dissemination of officially sanctioned information for shaping public opinion, very wary concerning the “spreading of rumours” via social media, and to set significant limitations on information disclosure, for example regarding environmental assessments or other project and planning documents. There are very difficult matters under discussion for example, regarding disclosure and release of government information on such matters as toxic wastes; and also the debate about what constitutes acceptable and unacceptable practices on the part of members of the public regarding spreading of opinions (in an age where observations can “go viral” in minutes).

Given that China now probably has the world’s largest digitally-connected population, and many of the most sophisticated users of communications technology of any country, clearly there must be new accords reached to ensure that these technologies support not only educational and awareness needs, but also serve as the basis for improved dialogue between various interests. Only in this way can there be real movement towards genuine public participation. What constitutes appropriate rights, responsibilities and even duties on the part of the public, businesses and government is an issue that is likely to be tested in various ways, just as happens elsewhere in the world. It will be encouraging if China can indeed find ways in which a well-educated public can become among the world’s best monitors of environment and development progress.

7. Engaging the full range of Chinese enterprises in Corporate Social Responsibility (CSR). There are excellent role models for CSR, including many enterprises within China, and there are many types of activities that have been undertaken.

²⁹P. Andrews-Speed. 2012. *China’s Long Road to a Low-Carbon Economy - An Institutional Analysis*. Transatlantic Academy Paper Series. 26 pp.
http://www.transatlanticacademy.org/sites/default/files/publications/AndrewsSpeed_China'sLongRoad_May12_web.pdf

These are well documented, and with awards (e.g., Golden Bee corporate award) and other mechanisms to encourage CSR participation.^{30,31}

Progress is still relatively slow in comparison to the needs, and advanced characteristics such as development of green market supply chains leave much to be desired. However, CSR could well become one of the most important bright spots of China's environment and development relationship during the coming decade. If CSR becomes widespread, including SMEs in China and in Chinese companies of all sizes engaged in overseas activities, there will be benefits not only for domestic green development but also for other countries.

What is necessary to accelerate the pace of acceptance? In countries such as the USA, CSR has been driven mainly by specific actions of industry associations and individual companies, coupled with dialogue and approaches involving stakeholders. In China, it is likely that government will be more proactive, perhaps using legislation or other "compulsory" mechanisms. In addition, government could use a variety of tools such as economic incentives, education, and involvement of SOEs in the greening of market supply chains. Some multinational companies in China could be called upon to share their experience as well.

Government might also take a sectoral approach, strategically working with sectors such as automobiles, heavy chemicals, agri-food subsectors, etc., in order to improve many of the specific needs such as green certification and standards, implications of CSR in natural resource development, etc. There are important roles in promoting CSR for the government-aligned chambers of commerce and other business and industrial associations.

While it would appear sensible to pursue a broad program of CSR implementation within China, there are definite challenges and issues. One major concern is simply the short-term profit perspective of many businesses. Tied to this are the still low fines or other penalties imposed in some situations of pollution or social problems created as a result of industrial activities. Some other concerns include the limited push from the financial sector to incorporate environmental criteria into their loan approvals, limited interest on the part of investors in the Chinese stock market to promote CSR, and the limited use of environmental risk criteria on the part of insurance companies. Fortunately there is movement on these concerns. Another issue is the lack of transparency in the operations of many companies—not the necessary level of accurate data and information release on emissions release, monitoring to ensure follow-up to EIAs or other commitments. A major concern has been the local protectionism of local governments regarding the way environmental and social matters are treated. All of these problems are well enough known, but difficult to resolve.

³⁰ <http://www.csr-china.net/en/second.aspx?nodeid=ddd0b45c-b7c4-4947-b2e3-e20374708733>

³¹ Li-Wen Lin. 2010. *Corporate Social Responsibility in China: Window Dressing or Structural Change?* Berkeley J. of International Law. 28(1):64-100.
<http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1377&context=bjil>

8. Addressing shortcomings in agricultural sustainability and impacts on green development. Food security will always be a major concern for China's government and society, and fortunately there has been impressive progress in food self-sufficiency. However, several major shifts are now underway with major implications for China's green development. One is the consolidation of farms and the complex issues surrounding land allocation, rural-urban migration, and aging farm populations. A second cluster of concerns relates to the very substantial and increasing environmental impacts of farm production and processing. With the shift to animal protein in people's diet, the expansion of aquaculture and feedlots for livestock, and the need to expand agricultural land to supply fodder are creating many pressures. This issue extends to agricultural water demand. Agricultural activities pollute soil, air and water, and issues such as non-point source pollution are very difficult to control. In addition, processing agricultural products have created major pollution in various parts of China.

Rural sustainability is intrinsically and intricately related to China's biodiversity and the health of ecosystems. Grasslands are under intense pressure as a consequence of the expansion of livestock, and also from alternate uses of land. Despite China's great commitment to nature reserves and other forms of land and water conservation and protection, management of social aspects of use, perceived inequalities, illegal harvesting and other problems are working against sustainable use. Functional ecological zoning, and red lining for protection of ecological services are still at an early operational stage. Integrated management strategies for coastal marine areas and for water basins leave much to be desired.

In addition, as recent years of extreme weather demonstrate, there can be no guarantees that China will escape ravages of climate variability and change in the decades ahead. Already a serious and expensive set of adaptations and mitigation efforts is required to lessen the impacts of flood, drought, and severe summer and winter weather in various parts of China. It is a tribute to the resilience of Chinese rural and suburban communities that, even with more intensive use of the natural resource base, there has been considerable progress on disaster planning and management. However, there may be significant tipping points, especially regarding ground water, toxification of agricultural lands, and other ecological concerns including loss of key species such as pollinators.

From a social perspective, the ability to carry on traditional approaches to agriculture is likely to be limited by the outmigration from communities, and through land consolidation and conversion to other uses. Thus China will have to continue innovating, as it is doing by introducing new economic activities such eco-tourism, wine production, and in some environments such as the desert and semi-arid areas, medicinal crops.

9. Aligning New Style Urbanization with Ecological Civilization aspirations and green development needs. The unprecedented attention being given to urbanization is certainly well justified. It is the most important long-term investment China will make in its stock of built capital and has enormous implications for the environment and people's future prosperity. The rush to urbanization will peak over the coming 15 to 20 years. However the patterns of infrastructure now being created will set the stage for 50 to 100 years. Thus issues such as option foreclosure associated with design of cities, suburban

growth and sprawl, and the choices for interurban transportation and environmental connectivity are extremely important. Most urban citizens now or eventually will perceive themselves as part of China's 'middle class.' They will set the pace for sustainable consumption, NIMBY, and other environment and green development matters. McKinsey and Associates³² estimate that the most important group among consumers will be the 'upper middle class' who in 2012 constituted about 36 million households in urban areas. By 2022 their number may reach 193 million urban households. Their use of disposable income will be extremely important in determining sustainable consumption outcomes, and the demands for a high quality urban lifestyle.

'New style urbanization' is a work in progress led particularly by Premier Li Keqiang. It places central emphasis on putting people at the heart of urbanization ("humanity oriented"), but addressing the realities of cities as the engine of economic growth, and the need to seek both "quality and efficiency" in the layout and operation of urban development. Urbanization must contend with improvements to the largest cities, but also place more attention on medium and smaller cities, and on the rate of development of new cities.

Media reports during the last half decade—when economic stimulus funding was easy to come by—of quickly built "ghost cities"³³ with relatively few inhabitants, present a disturbing picture of poorly timed local planning decisions. The very rapid development of national transportation networks and interurban connections sometimes raises questions about actual levels of demand. Considerations in infrastructure investment, such as access to water supply, remoteness from markets, and ecological impacts may play second fiddle to local ambitions and showcased physical results of investment. What is clearly required throughout the country is an integrated approach to infrastructure renewal and construction that is based on realistic goals and, as noted by Premier Li, *a path that incorporates the ideas of green and efficient growth.*³⁴

For New Style Urbanization to properly take hold, the following topics must be well worked into the policies for planning and implementation:

- **Job creation** with an emphasis on the service sector, green industrial parks and manufacturing facilities, and appropriate new activities for migrants.
- **Sustainable life style attributes for urban dwellers** so that people of all levels of prosperity have access to basic services; green transportation; environmentally friendly, safe and clean neighborhoods, the means to live comfortably and sustainably, and with equitable access to social benefits.

³²http://www.mckinsey.com/insights/consumer_and_retail/mapping_chinas_middle_class

³³ Ordos, located in Inner Mongolia became the 'poster child' for "ghost cities" after international media coverage including a Time magazine article. Here and in many other spots, empty apartments and unused roads and offices may reflect the time lag between incredibly rapid infrastructure completion, and the sale and occupancy of properties, but the problems appear to be much deeper, including overly ambitious projections of economic growth and poor development planning, corrupt land development practices, and the purchase of multiple properties by individuals or companies but leaving some empty.

³⁴<http://english.peopledaily.com.cn/90785/8393033.html>

- **Shifts in revenue sources to meet the expanding needs of transportation, environmental and social development.** In particular, the land alienation process carried out by local governments is damaging in a number of ways, such as encouraging urban sprawl.
- **Reforming the unfair practice of *hukou* and other social and economic discriminatory policies against migrants and their families.** Modification or ending of these inequities has been called for by many Chinese experts, but still appears to be difficult to put into practice.
- **A regional approach to urbanization is required in order to address environmental protection concerns and for efficient infrastructure development.** The inability to handle air pollution, control of floods and other natural hazards, groundwater depletion, and other environmental issues at present is in large measure the consequence of weak regional development planning and monitoring. The problems will expand with climate change and with rapid extensive growth mode. China has made good progress towards linking hinterlands and urban environmental protection through its eco-compensation activities, but these are not operating with optimal efficiency; and financial costs are not being paid by the urban areas receiving the main ecological service benefits.
- **Compact city design and ecological red lining.** Ring roads encourage sprawl and the proliferation of highways contributes to suburban development and the accompanying commute-by-automobile lifestyle that has now developed around many Chinese cities. Urban sprawl cuts into farmland and sometimes into ecologically sensitive areas. These and other problems suggest a need for much more effort to rethink the design of cities to make them more compact and complete. A new but not well-implemented idea is ecological red lining so that areas important for food production, water supply, cultural or other purposes are well protected, with significant penalties if they are disturbed. This is particularly important for areas where suburban development would otherwise be likely.
- **Extract lessons learned from eco-cities, low carbon economy initiatives, and other pilot efforts whether from within China or abroad.** A rich base of experience is available from cities around the world and certainly within China on urban sustainable development. While this experiential learning is well advanced in China, it is not being fully integrated into urban and regional planning. In general, integrated approaches are not a strong point, given the breakneck speed of Chinese urbanization and the compartmentalization of functions within municipal governments.

Despite this rather lengthy but still incomplete list of issues surrounding Chinese urbanization, many positive things can be said about progress to date, and about the dynamism and willingness of local governments to address the existing problems. Already, many cities are taking seriously the challenge of green development and experimenting with how to define new paths towards sustainability and ultimately towards Ecological Civilization. What should be clear is that during the coming years improvement of urbanization is a central to achieving a better environment and society relationship.

10. Aligning China's environment and development reforms with international accords including major global environmental conventions, other agreements and post-2015 sustainable development goals. China participates in many international agreements with environmental implications, whether these are part of global UN agreements or via less binding agreements made at the G20 or in other forums. For certain of these commitments, for example on the climate change convention, China has clear goals for greenhouse gas emissions intensity reduction; other obligations will surely follow in the years ahead. As progress is made on defining green growth and green

economy, there will be additional opportunities to work cooperatively with other countries in order to achieve necessary transitions. In the UN discussions for a new sustainable development approach, China will certainly wish to have its voice heard and to share experiences regarding green development.

There are many practical concerns regarding each of these points. The metrics for monitoring progress are still relatively weak, and the actual monitoring processes deserve careful attention to ensure information gathered is internationally compatible. This will be very important for matters such as greenhouse gas emissions reporting, and for agreements such as mercury reduction. On matters such as subsidies for green technologies, China will want to avoid repetition of what happened with wind and solar power international trade actions. Regarding post-2015 sustainable development and poverty reduction goals, it will be to China's advantage to highlight its successful experience during the implementation of the Millennium Development Goals, and to seek ways to build on this experience and to share it with others.

A decade from now, China should be able to demonstrate very clearly how its domestic actions have contributed to improvements in global environment and development. This will require careful analysis and consideration of the institutional strengthening and other advances in order to credibly demonstrate progress. Over the longer-term, as China gains experience in the construction of Ecological Civilization, there should be considerable interest globally and in some other countries in drawing upon this practical experience. As that occurs, China will be well positioned to incorporate key ideas into its *Going Out* efforts.

V. CONCLUSIONS

There must be a turning point in the complex relation between society and environment in China, whereby acute problems related to air, water and soil are seen to be lessening. Exactly when that turning point can actually be reached is uncertain, but it is an urgent matter in relation to the goals for a “moderately well off society” by 2020. Therefore, performance on environmental protection and green development during the remaining years of the 12th FYP and particularly in the 13th FYP will have to be improved quite dramatically. The shift from pollution emission reduction towards goals based on real environmental quality gains is essential, since targets for individual pollutant reductions alone have not proved sufficient to achieve overall effective improvement of environmental quality. Furthermore the quality and effectiveness of investments for environmental protection must be examined carefully now that government and industry are increasing spending, and will continue this trend with new action plans.

Chinese society clearly values the environment, expects improved environmental quality, and desires improvements that will reduce environmental risks of various sorts, including issues such as food safety. Expectations for quality of life are definitely on the rise as income levels increase, and as people become more appreciative of the many facets constituting a “good life”. At the same time, connections to the land and nature are being lost as millions of rural dwellers leave for cities and new occupations, and as access to electronic gadgets, automobiles and other components of a modern life style shape

interests and behavior of populations. Such rapid change presents both challenge for environment and social development concerns and opportunities to redefine what is important to a society, and to reinforce desired pathways. That is the challenge for Chinese society, government, and indeed, governance processes within China.

Citizens express their views in many different ways—in commentary as “netizens”, as consumers, and sometimes as angry demonstrators upset about development decisions, corruption, poor regulation of food purity and other issues. This dynamic provides a specific condition that permits government to learn from the people, and—as is frequently noted by high authorities—for the people to supervise the actions of government. The difficulty is setting in place sufficient but not stifling levels of checks and balances. More broadly, it is concern about rights, responsibilities and duties. Also, it is about improved formal public participation in decisions, and transparency through information sharing. Environmental improvement should be a double win when the right circumstances are in place: the improvements have human and ecological benefits that are real and worthwhile for both present and future generations and secondly, more effective ways of promoting social harmony emerge for problem solving among people and institutions driven by different interests.

What cannot be promised at this stage of China’s transformative changes and reform, is certainty regarding the level of success on longer-term environment and development matters such as those related to intensive exploitation of water resources, climate change mitigation and adaptation, biodiversity protection and protection of ecological services. For all these, there remains uncertainty and serious challenges, as they are closely related to various legacies of the past, and difficulties to address and change the demands created by China’s increasing population and rising consumption patterns. The longer-term problems are some of the most important to be addressed through construction of Ecological Civilization. They must be dealt with through technology and managerial approaches, but also by more effective restraints on demand, as determined by changes in perspectives, attitudes and behavior, and perhaps shifts in values. Society must become both more resilient and more adaptive in order to achieve an optimal environmental relationship. This is true not only in China but in other countries and societies as well.

Over the past two decades. China’s leaders have set in place an increasingly coherent and well communicated set of concepts to guide the country, its enterprises, and its citizens on the subject of environmental improvement. These ideas have been a balance of home grown thinking such as Ecological Civilization and internationally produced concepts such as Green Growth and Green Economy. Now, with the vision of *Beautiful China* there is the opportunity to bring focus to a sense of pride not only in what China has achieved, but also an appreciation of its marvelous endowment, and why it is so important to protect and cherish the natural environment, the cultural attributes and remnants of the past, while shaping as perhaps no other nation is capable, a new lifestyle and physical infrastructure compatible with living within earth’s limits.