

# China's Ecological Civilization and the World

## CCICED 2016 Issues Paper<sup>1</sup> December 2016

*In today's world, all countries are interdependent and share a common future. We should...create a community of shared future for mankind...We should build an ecosystem that puts mother nature and green development first...All members of the international community should work together to build a sound global eco-environment. We should respect nature, follow nature's ways and protect nature. We should firmly pursue green, low-carbon, circular, and sustainable development. China will shoulder its share of responsibility and continue to play its part in this common endeavor. We also urge developed countries to fulfill their historical responsibility, honor their emission reduction commitments and help developing countries mitigate and adapt to climate change. —Xi Jinping, 28 September 2015 UN General Assembly Speech*

[https://gadebate.un.org/sites/default/files/gastatements/70/70\\_ZH\\_en.pdf](https://gadebate.un.org/sites/default/files/gastatements/70/70_ZH_en.pdf)

### Introduction

In January 2017 CCICED will turn a new page on a story already 25 years in the making. CCICED's new Phase VI (2017 to 2021) will need to consider significant shifts in the storyline. International and national level momentum over the past few years has brought renewed promise of reaching turning points on major environment and development concerns and environmental action is mainstreamed as never before. There is a new green wave of entrepreneurs, and of commitments by enterprises and by elements of the financial sector. The pivotal point for improved green development outcomes is 2030—a middle milestone when many innovations will have taken hold. This is a once in a generation opportunity with many implications for China and other countries. But recent events such as Brexit, the US election, and other matters related to the wave of populist sentiment around the world suggest that turbulent times may lie ahead. It is therefore timely that CCICED is closing its Phase V work with a focus on China's Ecological Civilization and the World.

We know that even with all the global and regional accords now in place, there is no guarantee yet of adequate ecological security for any country. The national and international green governance frameworks still lag behind the growth in environment and development pressures. Investment and finance continue to be skewed towards unsustainable patterns and legal frameworks are inadequate to meet complex needs. These shortcomings are among the reasons why the 2015 reboot of sustainable development through the UN SD2030 Goals and the 2015 Paris Agreement on Climate Change are so important. It is excellent that China and many other countries have ratified these accords, and taken major initiatives for their implementation.

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<sup>1</sup> An Issues Paper has been produced by the CCICED Chief Advisors for the CCICED AGM each year since 2002. It is intended to draw together key ideas based on the annual AGM theme and on work produced by the various research teams and other sources. The content reflects the views of the Chief Advisors and not necessarily the opinions of CCICED Members or others associated with this Council. Past Issues Papers are available online at <https://www.sfu.ca/china-council/council-documents.html>

Globally, however, if the SDG2030 efforts prove inadequate, if the world’s oceans are ecologically stressed and resources depleted, and if the worst ravages of climate change are unleashed, then it will be a tough time for all. The main point is that no matter how well China does domestically, unless the rest of the world progresses towards “a sound global eco-environment” as called for by President Xi Jinping, there will be no guarantee of long-term environmental security in China or elsewhere. Indeed, to prevent such a situation, we must promote much more strongly the means to accelerate progress on environment and development efforts—perhaps through even more far-reaching goals and tighter timelines than now exist. And, certainly, we need a better capacity to share innovation ideas, capacity and products so that green development is accessible to all, including nations with limited means.

### **China’s Opportunity**

The fundamental issue for this AGM is how China can become a leader on environment and development concerns by accelerating progress on its own green transitions, and by partnering with others. Not only for the long-term benefit to its own future prosperity, but also for the planet and all people. In its modernization during this half-century, China is facing three great moments. The year 2020 will bring attainment of a ‘moderately well-off society’ (*Xiaokang Society*) just prior to the 2021 centenary of the Chinese Communist Party. By 2030 China hopes to be among the front-running nations for innovation—with important implications for goals such as peaking greenhouse gas emissions, and fulfilling its national action plan under the Convention on Biological Diversity and China’s SDG2030 Implementation Plan<sup>2</sup>. By 2049, the centenary of New China (the PRC), China wishes to be an all-round leading nation, prosperous and very advanced in its capacities including innovation for environmental matters.

Starting with the new and very green 13<sup>th</sup> Five Year Plan (2016 to 2020)<sup>3</sup>, China has set out a ‘green is gold’ top-level policy path supporting the country’s transition to an Ecological Civilization.<sup>4</sup> This concept is still new enough that it is not well known around the world. But there is interest certainly on the part of some developing countries and UNEP. With China’s recent commitments to enhanced South-South Cooperation<sup>5</sup>, new financial institutions such as the AIIB and the New Development Bank<sup>6</sup>, plus the Belt and Road Initiative (BRI)<sup>7</sup>, Ecological Civilization can become a part of China’s strengthened ‘going out’ approach.

### **A Global Green Turning Point by 2030**

It is reasonable to believe that China can become a more important player in efforts to achieve a global green turning point by 2030 through: (1) good performance in

<sup>2</sup> September 2016 release of the Implementation Plan from China’s Ministry of Foreign Affairs [http://www.fmprc.gov.cn/mfa\\_eng/zxxx\\_662805/W020161014332600482185.pdf](http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/W020161014332600482185.pdf)

<sup>3</sup> See *China’s Green Growth Roadmap in the 13th Five-Year Period*. Global Green Growth Institute and PRCEE. 76 pp. Also see <http://www.chinafile.com/reporting-opinion/environment/how-chinas-13th-five-year-plan-addresses-energy-and-environment>

<sup>4</sup> Further information on Ecological Civilization is available in: UNEP, PRCEE and CCICED. 2016. *Green is Gold. The Strategy and Actions of China’s Ecological Civilization*. UNEP. 43 pp. [http://web.unep.org/greeneconomy/sites/unep.org/greeneconomy/files/publications/greenisgold\\_en\\_20160519.pdf](http://web.unep.org/greeneconomy/sites/unep.org/greeneconomy/files/publications/greenisgold_en_20160519.pdf)

<sup>5</sup> <http://www.ipsnews.net/2015/11/opinion-chinas-new-south-south-funds-a-global-game-changer/>

<sup>6</sup> <http://euweb.aiib.org/html/aboutus/AIIB/?show=0> ; <http://ndb.int/our-purpose.php>

<sup>7</sup> <http://english.gov.cn/beltAndRoad/>

domestic actions, which are significant due to their immense scale, (2) making Ecological Civilization, green growth and green development an essential part of its overseas investments and international aid, and (3) greater and more proactive involvement in global green governance issues and initiatives. The time between now and 2030 will see China go through three Five Year Plan periods. To a time when urbanization and rural development are at a far different stage; when modern transportation networks are in place; and where economic and social reforms have opened new opportunities. Green transitions are a very necessary part. All of this experience may help to shape outcomes elsewhere.

## **CCICED 2016 Studies and Analysis**

The following CCICED studies have been completed during 2016:

- Task Force on Rule of Law and Ecological Civilization
- Task Force on South-South Cooperation for Ecological Civilization
- Special Policy Study on China’s Role in Greening Global Value Chains

CCICED has initiated a Task Force on Green Transition Outlook, which will provide a progress report and some recommendations to the 2016 AGM, and continue its work during 2017. CCICED in cooperation with the World Economic Forum (WEF) convened a meeting on Sharing Economy in June 2016 providing some results of interest in the context of environment and development. Some Background Papers will be tabled at the AGM: *Preliminary Ideas on Greening the Belt and Road Initiative*; *Theory, Methods and Practices of Benefit Cost Analysis in the United States: A Case Study in PM2.5 Policy Analysis*; and a *Framework for an Ocean Initiative within CCICED*.

This past year has been an extremely active period for the introduction of new green policies within China plus the major G20 meeting hosted by China in September 2016. The *Policy Progress Report*<sup>8</sup> prepared by the Chief Advisors Group for tabling at the AGM documents the main points, and therefore this information will not be repeated in the Issues Paper.

Also during 2016, considerable effort has occurred on planning for CCICED Phase VI. Much of this effort is relevant to this year’s AGM theme, since it is recognized that in future there must be considerable attention to China and the World as part of CCICED’s work. This draft Prospectus will become available for the information of members and others.

## **Opportunities for ‘A Common Shared Green Future’**

The need for accelerated progress on commonly held goals such as the SDG2030 agenda and on climate change is quite obvious. Successfully tackling these and other

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<sup>8</sup> *Progress in Environment and Development Policies in China and Impact of CCICED’s Policy Recommendations 2015-2016*. Earlier editions of this document are available at <https://www.sfu.ca/china-council/council-documents.html>

major issues in as short a time as possible will create a snowball effect. The adopted innovations and reform will open space for additional transformative changes. Another way of putting it is that “success breeds success”.

### **Better Results Sooner?**

Is it possible that important targets for 2030 could actually be achieved by 2025 or even sooner? As CCICED members such as Lord Stern have pointed out, in the case of coal and other fossil fuels in China (and by implication elsewhere in the world) early achievement of their peak use would have major value in the race to slow global climate change.<sup>9</sup> The list of other such efforts could be long. In addition to energy factors, drastically reducing water use in agriculture, greening urban infrastructure, avoiding locked-in effects from overinvestment in highly polluting sectors, plus accelerating the shift to a green financial system will help immensely. The benefits in quality of life, for example by reducing environment health risks, and for employment gains in the new green economy are likely to be lasting and of large magnitude.

Obviously it is not only China that should ask the question. Indeed, for the developing countries an accelerated pace of change is most urgent. Many look to China for advice and assistance, given the country’s rapid economic growth. The accumulated experience of China in addressing the environmental and social impacts of this growth is now highly relevant. The opportunities for richer countries are very diverse but greater levels of international cooperation and partnership are required to maximize benefits. No country on its own can escape the impacts of uncontrolled global warming, loss of ecological services, and effects of pollutants transported in the oceans and atmosphere, or the human dimensions of conflict over natural resource declines. Fortunately, there much room for advanced science and technology collaboration, global green IT implementation, and for improvement in investment patterns and international green governance. But it will take bold strokes to make it happen, as demonstrated by the 2015 agreement between China and the USA on energy and climate change objectives.

Opportunity-driven initiatives are best because they lead to win-win situations. Let us consider some of these opportunities in the context of enhanced achievement of environment and development goals for (1) China, (2) South-South Cooperation, and (3) the Global Community.

### **Potential Opportunities for China from Accelerated Progress on Environment and Development Goals**

The opportunities and benefits for China are spread rather evenly among the various components in Ecological Civilization, as noted below.

#### ***Environmental***

- Snowball effect from successful partnerships and increased green investment will accelerate the pace of meeting goals related to *War on Pollution*, climate change and other environmental protection needs.

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<sup>9</sup> Ye Qi, Nicholas Stern, Tong Wu, Jiaqi Lu & Fergus Green. July 2016. *China’s Post Coal Growth*. Nature Geoscience. 9: 564–566.

- Accelerated green technology transitions will include products and services developed jointly by China and others to satisfy global needs—and, if meeting international and national standards, become important throughout the world.
- Enhanced safeguarding of ecological services and goods in China and in neighbouring regions and countries.

### ***Economic***

- Larger domestic and international markets will exist for Chinese green products, technology and services, along with other early adopter advantages.
- Important contribution to green quality standards for manufacturing and other industries as part of *Made in China 2025*.
- Accelerating the pace of economic reform through green transitions will hasten growth of new jobs and businesses, including within the service sector.

### ***Social and Cultural***

- Reduced environmental health risks.
- China's sustainable domestic consumption progress will be hastened, including consumer values and choices.
- Social development through education, awareness-raising, and participation.
- Value shifts towards Ecological Civilization ideals.

### ***Political***

- Expanded role for China in global green governance reform and decision-making.
- Build China's international reputation as an environmentally responsible country and business partner.
- Create an international perception of taking on responsibilities in line with China's economic size and ecological footprint; and benefitting others by sharing capacity to deal with environment and development issues.

### **For Improved South-South Cooperation Success**

Many of the world's poorer countries lack the institutional capacity, finance and technical means to fully address the broad range of needs highlighted by the SD2030 Goals and are likely to be among the most significant beneficiaries from partnerships, development assistance and strengthened trade links with China. The tie-in possibilities via the Belt and Road Initiative, the S-S Cooperation funds from China for Climate Change and for SD Goals, plus support for initiatives through the AIIB and other Chinese influenced funding, are significant since these are intended to be dispersed in quick but effective ways, and there are start-up commitments to make them green. However, it is very worthwhile to press for priority to green initiatives. Below are some ways in which accelerated green South-South Cooperation can be a win-win for both sides (China and partner countries).

- China's green experience can influence the green transitions of many other countries, and regional or global development outcomes of various types.
- The ability to build cooperative arrangements with neighbouring countries on matters such as river basin management, ocean conservation, or regional air pollution can avoid conflict and extend development benefits.

- Belt and Road Initiatives offer the possibility of having comparative green experience emerge from within the many countries involved and use this experience throughout major regions such as Southeast Asia and Africa.
- Successful, accelerated green development via S-S Cooperation may help to spread understanding and acceptance of Ecological Civilization values beyond China.
- Selling Chinese green goods and services, and therefore increased trade potential are outcomes that can be expected as a consequence of well-managed S-S Cooperation.
- An accelerated pace for green transitions should lead to more rapid poverty reduction rates, improved health and other social benefits in both rural and urban settings of poor countries.
- More rapid transfer of Chinese experience regarding green infrastructure may help many of the developing countries to avoid undesired lock-in effects of poor urban planning, energy or transportation infrastructure, etc.

### **For Benefits to the Global Community**

A handful of large countries, including China, are absolutely essential participants for progress in securing global environment and development benefits. While these countries will see national advantages in their individual green transitions, their contribution globally should be factored into their decision-making.

- Reaching turning points on the control of environmental threats as quickly as possible will create a global willingness to invest in further action to eliminate the problems. The classic example is the success of the Montreal Protocol in reducing the ozone hole created by CFCs.
- Green procurement through global supply chains will be helped if there is progress from the 10 to 30% level of certified green products commonly found in commodity supply chains. Accelerated efforts are needed for commodities such as timber, fish and agricultural products for soy and palm oil. Also for many types of manufactured products.
- Per capita ecological footprints<sup>10</sup> of most nations could be substantially reduced while likely improving quality of life and improving ecological services. The faster this happens, the more flexibility there will be to accommodate the expected expansion of global population, and to ensure that the poor in the world have sufficient access to necessities.
- As environmentally friendly practices are mainstreamed, they will become the ‘new normal’ and can provide a more advanced baseline for continuous improvement everywhere. Much can be learned from the global impacts of smart phones. This has led to a virtual revolution regarding information exchange, social media and consumer habits. All in a period of only 15 years.
- The hope is that the ambitious SDG2030 agenda will become universal—sooner the better. If so the conversation on environment and development in 2025 will be far different than now. In fact we can expect the dialogue to be much closer to China’s values-based concept of Ecological Civilization. Rapid success with SDG2030 will set the world on a much better path for biodiversity conservation, climate change mitigation and poverty elimination. Key to this happening is attention to inclusiveness.

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<sup>10</sup> See [http://wwf.panda.org/about\\_our\\_earth/all\\_publications/lpr\\_2016/](http://wwf.panda.org/about_our_earth/all_publications/lpr_2016/)

## **Conclusion**

We know that actions of leaders can influence laggards, can help those less able to meet their own ambitions, and above all can bring about burden sharing. There is much talk and scepticism about whether all nations are capable of meeting the goals they have set for themselves in response to global commitments. Also of ‘free riders’ who will draw global benefits, even if they do not contribute as fully as they might, or if they become contrarians on such major issues as climate change mitigation. And, at a practical level, whether those prepared to contribute to the global good may end up facing competitive threats in trade or other economically challenging ways, especially during prolonged and uncertain transition periods. These challenges may actually be diminished through accelerated action on the part of those nations well situated to make contributions. China certainly falls into this category since it has already made it clear that a steady course is needed on green development and it has the means to bring about change inside *and* outside the country.

As suggested in this brief review of the need for an accelerated pace towards a ‘common shared green future’, the expectation is that the resulting benefits for China and other countries will be comprehensive and potentially very widespread throughout the world and of long-term significance. However, there are many challenges.

## **Ten Issues**

The ten issues noted below are by no means the only ones of concern, and surprises are likely. However these ten points certainly cannot be ignored if China is to fully engage with the world on environment and development issues. Certainly the Government of China is aware of, and is in the process of addressing all of these concerns. Yet much more is needed in order for smooth implementation of green transitions that will support new economies, strengthen social development with better inclusion of all people in decision-making, and lead to a clean environment with healthy ecosystems. There are contributions to be made at all levels from local to global, and there needs to be a strong focus on governance, rule of law and green finance always. The great need is for innovation to take us much more quickly to sustainable solutions that can be swiftly applied and of enduring value.

The short accounts under each cannot do justice to the complex topics. They do provide a window into a number of important discussion points.

### **1. Better and faster implementation of China’s 13th Five Year Plan green goals**

Through successful 13th FYP achievements China will be perceived globally as a leading contributor to environment and development security, especially if the country is seen to be addressing the global agenda adequately through its practices both domestically and internationally.

- This most environmentally promising FYP should enable turning points for all aspects of the War on Pollution, across the board gains on Green Development, and other progress towards Ecological Civilization.
- The current FYP should set the stage for greater gains in the coming 2 plans as well as guarantee the role of environmental contributions to a *Xiaokang Society*.



- Stronger implementation policies based on adaptive planning and management are needed in key sectors, central agencies and environmental agencies including MEP.

## **2. Strengthening of integrated green governance and institutional change**

For transformative change to occur at the pace and scale demanded over the coming decade or more, cross-sectoral, integrated efforts must be strengthened. The AIIB resolve to be “lean, clean and green” should be echoed across other institutions. Institutional arrangements for sustainable development implementation and the construction of Ecological Civilization remain uncertain, whether in China or other countries. International organizations are struggling to deal with the complexity of decision processes and are certainly in need of innovation to fully implement global agreements.

- Within China and globally environment and development progress continues to be hindered by governance inadequacies, with particular concerns about enforcement and about inadequately focused laws, outmoded institutional arrangements, and financial sector issues.
- A governance framework adequate for an Ecological Civilization in China<sup>11</sup> may be on the horizon but is not operative on the ground. This challenge can be met in 5 to 10 years if the political will remains strong.
- Globally, greater Chinese participation and leadership is needed. The example of China-US cooperation on climate change, the AIIB and various other examples exist. However there are gaps and underperformance in many agreements, and new matters emerge every year, for example those involving the sharing economy, and micro-sized plastic particles polluting the oceans.

## **3. Using initiatives for climate change and for SDG2030 implementation to accelerate social development improvements**

Seek new opportunities within China and in China’s activities abroad for improving social equity within green urban and rural communities, enhancing gender equity, creating solidarity among groups facing similar issues such as climate change adaptation, and strengthening capacity to address social and environmental impacts through education and other means. The keyword is inclusion.

- Improved public participation along with education and training, plus information sharing remain among the most important elements for improved environmental management and protection, sustainable consumption, and other aspects of creating an Ecological Civilization.
- What is truly remarkable at global level discussions on environment and development is how many social organizations/NGOs from all parts of the world now participate. Their efforts are needed on a much larger scale at local and national levels in order to strengthen and speed up green social development and other environmental matters.
- Improved mobilization of funds for social development is an important part of all environment and development efforts. These funds are needed to address health and safety matters, environmental education, intervenor funding to ensure the voices of poor or displaced people are heard, and to provide benefits such as green village technology. Green financing for these and other social matters must have

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<sup>11</sup> Pan Jiahua 2015 *China Environmental Governing and Ecological Civilization*  
<http://link.springer.com/book/10.1007/978-3-662-47429-7>



continuity, including post-project availability. China has some good examples of such effort through its eco-compensation programs. Such examples might provide a good basis for green social endeavors abroad.

#### **4. Building a more consistent and comprehensive green growth strategy**

Since 2009 the G20 has highlighted the need for removal of fossil fuel subsidies, desirability of green growth strategies at national levels, firm action for low carbon strategies, and most recently in their Hangzhou meeting this September, urged the scaling up of green finance.<sup>12</sup> In the coming year it will be helpful if China and Germany can work together with leading developed and developing economies at the forthcoming G20 to expand the attention given to green growth and finances, and low carbon economy.

- During the 2016 G20, China pressed for greater effort globally to sustain economic growth. The need is evident, even though limits and challenges exist throughout the world, including China. A green transition in economic growth is essential but how to fully revamp the economic system is still challenging, often controversial. China is making progress but still does not adequately link economic and ecological reform.
- The critical period for this global green transition is 2020 to 2030, when substantial progress on low carbon economy and achieving SD2030 goals is paramount. If China can outperform on its national green economic transition during this time its future will be more secure perhaps for the balance of the 21st Century. In addition, such progress will put China in a better position to assist other developing nations; and to take its place as the world's largest sustainable economy.
- Climate change will be a pervasive element crossing many sectoral boundaries in future green economic development. This reality needs to be factored into many more of the most significant economic and investment decisions. There needs to be almost constant monitoring to determine if this is happening in a way that brings about desired changes as rapidly as possible, and with due consideration of how to maintain public sector and private sector support within China, and certainly also with partner countries in overseas endeavours.

#### **5. Implementing integrated green development and Ecological Civilization**

Ecological Civilization is a means to link values, key priorities and cross-sectoral cooperation for decisions that affect development within China or in Chinese undertakings abroad. These are not points only for the Government of China but also for Chinese enterprises and investments; and for the many initiatives involving Chinese organizations, financial organizations and other bodies that together shape outcomes for environment and development. The key concern is to move towards integrated development decision-making within the context of an Ecological Civilization umbrella.

- It is of value to build integrated strategies such as BRI, development in the Yangtze and other major rivers and economic development zones in a way that addresses needs such as regional air and water pollution, climate change adaptation, etc. Integrated approaches need to be applied more effectively in future efforts of rural and urban planning, and river basin, coastal zone and marine

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<sup>12</sup> [http://www.g20.org/English/Dynamic/201609/t20160906\\_3396.html](http://www.g20.org/English/Dynamic/201609/t20160906_3396.html)

planning. While this point is reasonably understood at various levels of government, the implementation policies are not so well developed yet.

- China's integrated green development should become a standard approach in its international cooperation, and in its many overseas land and water developments.
- Energy decisions need to become more integrated, with adequate attention to climate change agendas including gender impacts, co-benefits and environmental assessment.
- Giving greater attention to green planning, ecological redlining and various aspects of urbanization and rural development is necessary in order to avoid option foreclosure and undesirable lock-in effects.

## **6. Continuing to expand and accelerate the pace of green South-South Cooperation and enhanced S-S-N action**

China is ‘Going Out’ to the nations of the South in an unprecedented way via multilateral and bilateral commitments. There is sharing of its own experience, skills and technology, and its own approach to ODA, which places emphasis on trade and investment as well as direct financial assistance. China also has signalled its interest in S-S-N joint efforts. Through BRI and new financing, China is making a generation-long effort at an unprecedented scale. Success will change the outlook for growth and quality of life in many partner countries.

- The substantial increases in funding by China for developing nations has the potential to be a major game changer during the coming decade and beyond. There are numerous statements that some of the funds will be channelled to environment and development, and certainly to climate change and for SDG2030 initiatives. However it is early days, and there will be competing priorities. The various ODA envelopes must be well coordinated and operate within robust green guidelines. Also, there should be long-term commitments in order to address ecological and other concerns.
- It is essential that the shift be towards Ecological Civilization, whether or not this term is embraced universally. The need is for sustainable development adjusted to meet the specific conditions of individual countries. China is strong on assessing the supply side. The demand side is less clear, and needs to be addressed quite urgently. Then, adaptive processes are required to ensure mutual interests are served.
- All of China's overseas efforts should be guided by green development goals and standards, and as necessary include green capacity building. Sharing of green technology innovation can and should be part of the package.

## **7. Making certain trade and investment, global value chains and other international economic arrangements fully support efforts to build an ecological civilization with full sharing of the resulting benefits**

### **(a) Ensure trade and investment agreements fully incorporate green development**

New regional and bilateral agreements will boost globalization, even as there are some movements towards “deglobalization” in parts of the world. These agreements have flourished in recent years, with many initiated or supported by China. The proliferation is certainly driven in part by the slow pace of WTO negotiations. However, the more fine-grained agreements are also a way to bring in concerns more specific to the priorities of specific countries or regions and those of China. They

should, however, always promote and take on board best practices regarding green development.

- The need is to bring consistency in treatment of environment and sustainable development concerns into all new agreements, with adequate monitoring and enforcement mechanisms for green development and environmental effects.<sup>13</sup> Also, to provide adequate opportunity for green capacity development with partner countries, and, as necessary, avoid any activities that will lead to unsustainable outcomes, or unmitigated environmental impacts, including climate change.
- China's long-term green transition outlook could be bolstered by green trade agreements, since the new greener economy will depend upon favourable treatment of green products and services. Access to markets will depend upon meeting green standards abroad. And corporate social responsibility of international firms operating in China, and Chinese enterprises operating in other countries will be improved through environmentally sound trade and investment requirements. The concept of Ecological Civilization might be embedded in at least some agreements.

#### **(b) Embrace green standards and systems for trade and commerce**

How can international organizations and countries, including China, work more closely together to address the many downstream issues for standards including matters such as enforcement, traceability and other practical needs?<sup>14,15</sup> Globally, over the past 20 years a very complex web of green standards has emerged, some on a voluntary basis and others linked to trade agreements. These are subject to many constraints, relatively slow acceptance and sometimes lead to trade barriers or disputes. Concerns exist about verification of impacts and of actual compliance to standards. Illegal trade is a major concern.

- While China has progressed on many aspects of this issue, it is still highly vulnerable and has a low level of participation in some important commodity areas. Now at a crucial stage of expanding its domestic consumption and implementing domestic Low Carbon Economy, there are emerging issues about standards, credible reporting and verification. The public is engaged in many of these issues, including both food and environmental safety assurances in products.
- Green trade and commerce is a maturing field that requires much more attention from Chinese authorities and business. Making Chinese and international standards compatible, stamping out illegal trade practices, encouraging sustainable consumption and improved consumer choice, greening *Made in China 2025*, and expanding green procurement are key examples of what must happen.

### **8. Addressing planetary boundaries and ecological footprints**

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<sup>13</sup> An example of how to examine this issue is provided by the European Commission DG for Trade sustainability impact analysis of a China-EU Investment Agreement  
<http://www.trade-sia.com/china/wp-content/uploads/sites/9/2016/05/FIE93555-SIA-EU-China-revised-draft-inception-report-12-May-2016-clean.pdf>

<sup>14</sup> [http://www.oecd-ilibrary.org/governance/international-regulatory-co-operation\\_9789264244047-en](http://www.oecd-ilibrary.org/governance/international-regulatory-co-operation_9789264244047-en)

<sup>15</sup> See various reports of WWF China and of IISD on some concrete needs, for example:  
[http://awsassets.wwf.cn/panda.org/downloads/wwf\\_china\\_trade\\_report\\_en.pdf](http://awsassets.wwf.cn/panda.org/downloads/wwf_china_trade_report_en.pdf) ;  
<http://www.iisd.org/sites/default/files/publications/sustainability-impacts-chinese-outward-direct-investment-literature-review.pdf>

Turning China into an extreme conserver society at the same time as the nation becomes wealthy is a tremendous challenge, but one that must be met for both domestic and global reasons. It is also a part of the "green is gold" paradigm.

- Of special concern are the several components including key geochemical cycles labelled as Planetary Boundaries.<sup>16</sup> For example, excessive nitrogen in the environment (from agricultural fertilizers, automobile emissions and industrial uses) must be brought under control as soon as possible.
- Also of grave concern is the declining state of the oceans including ecological services and climate change impacts. China's Blue Economy<sup>17</sup> is expanding and is certainly not confined only to adjacent ocean space. The Blue Economy, globally and China's, must be reformulated to embrace green development principles and actions in a much more effective way than in the past. Expanded international cooperation is essential, including more effort on the oceans and climate change.
- China's rising consumption as wealth increases is slipping into unsustainable levels particularly in cities. WWF China's reports on ecological footprints indicate that in various aspects, especially carbon footprint, China now exceeds 'one planet' levels.<sup>18</sup> Such trends must be addressed either through more efficient uses, or through shifts in values on the part of both producers and consumers to reduce demand. While both aspects are underway, progress is still below the rate needed.

### **9. Using the power of disruptive innovations of IT hardware and software to hasten green transitions**

China has embraced 'Internet Plus', 'Big Data' approaches and many other leading edge efforts that combine innovative software and technology to provide for environmental, resource efficiency and sustainable development applications. Battery technology, smart grids, and environmental monitoring are among the many examples. Most recently the benefits and costs of Sharing Economy have become a focus.

- The future holds even greater potential to use rapidly advancing IT often in conjunction with other technology innovations from nanotechnology, biotech, and green industrial chemistry and software development to help achieve an Ecological Civilization. This is a prime area for both competition and cooperation, but will require considerable attention to appropriate governance measures applied in a timely and enabling fashion. Also, more attention to social, economic and environmental impacts.
- Certainly future changes will not proceed smoothly or linearly in coming years as new technologies, software apps, and other innovations are introduced. We can see into the future, but less accurately predict outcomes, especially after 2040 or 2050. Transportation is a case in point. However, the big picture of moving from fossil fuel economy towards renewable sources of energy, tighter management of water, capacity to monitor more carefully environmental risks, and many other concerns such as consumer preferences is becoming clearer with each passing

<sup>16</sup> <http://www.greattransition.org/publication/bounding-the-planetary-future-why-we-need-a-great-transition>

<sup>17</sup> See *The blue economy – growth, opportunity and a sustainable ocean economy*. World Ocean Summit 2015. [https://www.oceanprosperityroadmap.org/wp-content/uploads/2015/05/2.-State-of-the-Blue-Economy\\_briefing-paper\\_WOS2015.pdf](https://www.oceanprosperityroadmap.org/wp-content/uploads/2015/05/2.-State-of-the-Blue-Economy_briefing-paper_WOS2015.pdf) and *Developing a blue economy in China and in the USA* <https://cdn.americanprogress.org/wp-content/uploads/2015/05/ChinaBlueEcon-report-final.pdf>

<sup>18</sup> <http://www.zujiwangluo.org/ecological-footprint-results/> and [http://www.footprintnetwork.org/images/article\\_uploads/China\\_EF\\_Sustainable\\_Consumption\\_2014\\_English.pdf](http://www.footprintnetwork.org/images/article_uploads/China_EF_Sustainable_Consumption_2014_English.pdf)

year; and largely due to computational capacity, big data, and the increasing use of very sophisticated remote sensing of the oceans, atmosphere, land use, etc.

### **10. Improving valuation and verification**

The basis for decisions and assessment of progress must be highly credible and benchmarked with best practices in China and globally. Indeed the challenge is to move well beyond current best practices, especially via leapfrogging and rapid adoption of new technologies, better means of verification and other tools. Cost benefit based on adequate valuation of ecological services and careful assessment of carbon trading assertions are examples requiring on-going attention.

- China will need to provide transparent and credible information well beyond what currently exists to satisfy both domestic and international audiences. Greater international cooperation is needed in many cases, for example to reduce illegal, unreported and unregulated (IUU) exploitation of fish stocks, international trade in endangered species, and, very likely, in any system involving international carbon trading.
- Generally environmental benefits and ecological services remain unaccounted for in decision-making, and undervalued in national accounts. China is make progress in this area, but the reality is that much work remains to be done. In China's efforts with other developing countries, the situation is likely to be similar, or sometimes far worse since basic data may not be available. This is a theme that requires steady progress, backstopped by considerable scientific effort.
- The idea of individual green performance accountability of officials at various levels of local government is a new concept. It depends on having good information fairly applied in the performance assessment. This is a model that might have more widespread application, but also needs to be optimized for both impact and fairness.

## **Conclusion**

This Issues Paper has covered some pressing concerns for the future of our planet and people, and proposes an accelerated pace of action. We must remember however, that the green shifts are only part of a larger picture. The World Economic Forum has identified what it considers to be the 10 biggest global challenges.<sup>19</sup> These include climate change, food security, inclusive growth and creating 500 million new jobs globally, gender equality, future of the Internet, and a regulatory framework sufficient for the long-term improvement of trade and investment. Accelerating progress on green transitions must contribute to the solution of these and other challenges such as demographic shifts in various countries and regions.

Layered above all is a set of concerns such as how to achieve sustainable development and environmental security in the aftermath of violent conflict, or of political dysfunctionality and other governance failures. The persistent question of providing an adequate level of financial transfers (and transfers of technology) from richer to poorer countries lies at the heart of all aspects of global green development. This will require solutions well beyond issuing green bonds and other recent financial innovations, important as they may be. And how to ensure that people can have

<sup>19</sup> <https://www.weforum.org/agenda/2016/01/what-are-the-10-biggest-global-challenges/>

access not only to the essentials for life, but also the fruits of a prosperous way of life? Global population may rise to a mid-century UN projection of 9.7 billion people<sup>20</sup> making sustainability challenges much greater. But equally challenging are the rising consumption demands of newly rich and already wealthy countries.

It may be said that a call for accelerated progress on environment and development beyond the levels so painstakingly worked out in the Paris Agreement or other environment and development accords is futile. But there can be no alternative. We know that the various ratified environment and development agreements still do not add up to a whole that is sufficient to safeguard our planet's future. Currently no country can claim to have reached a sustainable state since we are interdependent and vulnerable to global environmental change.

Acting on this interdependence is a task for all. However, now is China's moment in the sun—over this coming decade and probably for much longer. There is no country in the world that is likely to spend more on green transformation in coming years. And it will do so for good social, economic and environmental reasons related to its own secure future. Internationally, China has the opportunity to move to the front of the line, not only on innovative technology development and application, but also to demonstrate how to rapidly implement desirable changes and to encourage such action throughout the world.

Hopefully CCICED through its present and future endeavors will contribute to this effort. Certainly two key approaches stand out. One is to create an Outlook approach consistent with meeting urgent and also longer-term policy needs related to innovative green transitions. The other is to support China's considerable efforts with developing nations through expanded consideration of green development in all of China's overseas endeavors.

China is drawing upon its ancient history and values as it constructs an Ecological Civilization. All of us, Chinese and non-Chinese, need to seriously reflect on how this integrative approach might lead us into a better global situation. The coming five years within China should help to prove its worth. If so, then it deserves to be an important component in our global quest for sustainability.

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<sup>20</sup> <http://www.un.org/en/development/desa/news/population/2015-report.html>