

**THE CHINA COUNCIL
FOR INTERNATIONAL COOPERATION
ON ENVIRONMENT AND DEVELOPMENT**

THE FOURTH MEETING OF THE FIFTH PHASE

Diaoyutai State Guesthouse, Beijing

November 9 – 11 2015

Summary Record

January 2016

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ABBREVIATIONS

AGM	Annual general meeting
APEC	Asia-Pacific Economic Cooperation forum
ASEAN	Association of Southeast Asian Nations
CANGO	China Association for NGO Cooperation
CCICED	China Council for International Cooperation on Environment and Development
CO ₂	Carbon dioxide
EIA	Environmental impact assessment
Eionet	European Environment Information and Observation Network
EMAS	European Eco-Management and Audit Scheme
EU	European Union
FYP	Five-Year Plan
GDP	Gross domestic product
GHG	Greenhouse gas
HFC	Hydrofluorocarbons
MEP	Ministry of Environmental Protection
NDRC	National Development and Reform Commission
NGO	Non-governmental organization
NRMS	Non-road mobile source
OBOR	One Belt, One Road
OECD	Organisation for Economic Co-operation and Development
PM	Particulate matter
PPP	Public-private partnership
RMB	Renminbi
SDG	Sustainable Development Goal
SERI	CCICED Secretariat
SISO	CCICED Secretariat International Support Office
SLCP	Short-lived climate pollutant
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
WWF	World Wide Fund for Nature

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I. Introduction

The China Council for International Cooperation on Environment and Development ("the Council" or CCICED, pronounced "sea-said") was established in 1992 by the State Council of the Chinese government in order to foster cooperation in the areas of environment and development between China and the international community.

The Council is a high-level advisory body that puts forth recommendations on environment and sustainable development for the Chinese government's consideration. It has so far convened 24 annual meetings organized in five-year phases.

The Council supports the development of a comprehensive approach to sustainable development and environment through close cooperation between China and other countries. At present the Council is composed of 25 Chinese members and 25 international members who were chosen for their experience, expertise, and influence.

The Council is chaired by Mr. Zhang Gaoli, Vice Premier of China's State Council and a member of the Political Bureau Standing Committee. It was at his invitation that the members of the Council attended the fourth meeting of Phase V.

The CCICED Bureau serves as the executive body of the Council.

The Council's host institution is the Ministry of Environmental Protection (MEP). Previously known as the State Environmental Protection Administration, MEP is responsible for the Council and for ensuring inter-ministerial coordination. It has established the CCICED Secretariat (SERI) to support international and domestic contacts. The Secretariat supports follow-up in China to CCICED recommendations, and deals with routine matters when the Council is not in session.

The Secretariat is assisted by the Secretariat International Support Office (SISO), directed by Ms Lucie McNeill and located at Simon Fraser University in Burnaby, Canada. Until April 2013 SISO was funded by the Canadian International Development Agency, afterwards by Environment and Climate Change Canada.

This Summary Record of the CCICED's fourth meeting of Phase V was prepared by Patrick Kavanagh for SISO, based on detailed notes recorded during the annual general meeting (AGM). Representing SISO's interpretation of the discussions, the Summary Record does not necessarily reflect the views of all participants. To encourage frank and direct dialogue, the Summary Record presents an overview of the points made during comments and discussion sessions without attribution to individual speakers.

II. Annual General Meeting

Item 1. Opening of the Meeting

China's Minister of Environmental Protection and CCICED Executive Vice Chairperson **Chen Jining** called to order the fourth meeting of Phase V, focusing on the theme of Enabling Governance Capacity for Green Transformation. He introduced the following dignitaries:

- Vice Premier of China's State Council and CCICED Chairperson **Zhang Gaoli**;
- Executive Director of the United Nations Environment Programme (UNEP) and CCICED Acting International Executive Vice Chairperson **Achim Steiner**;
- Germany's federal Minister for the Environment, Nature Conservation, Building and Nuclear Safety, and CCICED International Vice Chairperson **Barbara Hendricks**;
- Former Minister of Environmental Protection for China and CCICED Vice Chairperson **Zhou Shengxian**;
- Deputy Secretary General of China's State Council **Ding Xiangyang**;
- China's Vice Minister of Environmental Protection and CCICED Secretary General **Li Ganjie**.

As well he introduced new Council members Minister **Barbara Hendricks**; Assistant Secretary General of the United Nations Development Programme (UNDP) **Magdy Martinez-Soliman**; and Director of the Norwegian Polar Institute **Jan-Gunnar Winther**. Minister Chen noted that he also is a new member. He welcomed guests, other Council members and Council associates, and observers to the 2015 AGM, and declared the meeting open.

Item 2. Secretary General's Progress Report and Work Plan

Secretary General **Li Ganjie** presented to Council his report on the progress of work during 2015 and CCICED's work plan for 2016. Here are the highlights of his presentation:

First, promoting the implementation of the policy recommendations. During 2015, major progress was made in China's environmental development. New policies and initiatives were launched. The policy recommendations put forward by the Council in the past have become reality. In particular the 5th Plenum of the 18th Party Congress has taken green development as one of the five development concepts for the 13th Five-Year Plan (FYP). This provides an important guarantee for China's green development. For two consecutive years CCICED has talked about adding green development to the 13th FYP. This has been reflected increasingly clearly in policy decision making and has become an important part of the top-level design of ecological civilization.

In the past few years, the Council not only paid attention to macro strategic policy research but also to how the recommendations could be implemented. Following directions from Vice Premier Zhang Gaoli, and in accordance with local needs and local willingness, CCICED carried out pilot and demonstration projects. For example, the Tianjin green supply chain project, based on CCICED research results, developed policies and measures in a number of industries in Tianjin and led to establishment of the Asia-Pacific Economic Cooperation forum (APEC) green supply chain cooperation network.

At the same time important results have been achieved in CCICED's sustainable consumption pilot project. CCICED supported the development of a sustainable consumption indicator system, and a number of different models for promoting sustainable consumption in Hubei province, Xiangyang city.

In addition, policy recommendations such as those related to government environmental auditing, ecological redlining, and the integration of laws and regulations have been implemented in China on a pilot basis.

Second, carrying out policy research centred on hot topics to support China's green transformation. In 2015, the Council carried out research projects on green financing, rule of law and ecological civilization, eco-environmental risk, soil pollution management, among other topics. With close cooperation from

domestic and international experts, research was conducted and recommendations put forward to relevant departments. All this has been incorporated into the latest environment and development policy of China. Through research, CCICED has helped improve China's governance of environmental issues, not only its national governance capacity in general but also facilitated China's integration into the international governance system.

In June 2015 CCICED held the International Advisory Meeting on Environment and Development for China's 13th FYP and provided input on the coordination of economic, social, and environmental development during the 13th FYP. Vice Premier Zhang Gaoli and other senior officials listened to the recommendations and held an in-depth and frank dialogue with meeting participants.

Third, the work plan for 2016. This is the starting year for the 13th FYP and also an important turning point for China's transformation and development. The Council will organize a series of research projects, dialogue meetings for think tank and high level officials along the One Belt, One Road (OBOR) countries, promote the establishment of a think tank cooperation network on environment and development, and hold a high-level seminar on the sharing economy. The Council will conduct policy demonstration projects on green finance, corporate social responsibility, and government environmental auditing.

2016 is also the final year of Phase V, when the Council needs to plan for Phase VI. In accordance to Vice Premier Zhang Gaoli's direction, the Council will strive to fulfill its role as a two-way platform, promote China's green development and support the achievement of global medium- and long-term sustainable development goals.

Item 3. Keynote Speeches

CCICED Executive Vice Chairperson **Chen Jining** introduced CCICED Acting International Executive Vice Chairperson **Achim Steiner**, who delivered a keynote address. Here are the main points he made:

History will look back on 2015 as a defining moment of this generation. Only a few weeks ago, the world met in New York to agree on a new Agenda for Sustainable Development and to target the year 2030, with 17 goals adopted as part of this agenda.

In just a few weeks' time, most of the world will convene in Paris for another significant moment in the history of the global efforts to address the challenge of climate change. The agreement that may emerge out of Paris seems today right at our fingertips, in no small part due to China's efforts.

China's unprecedented contribution to building that momentum reflects its progress towards becoming a "moderately well off society" and its growing role in the shifting global landscape. For example, in the past few days:

- The announcements with the US and France sent a strong signal about the importance of making the transition to a low-carbon economy and mobilizing international support, with US\$100 billion allotted for annual climate financing by 2020 to address the needs of developing countries.
- The demonstration that actions speak louder than words with the establishment on the part of China of the South-South Co-operation Assistance Fund that will invest some US\$12 billion in 600 developing country projects by 2030.
- The Intended Nationally Determined Contributions target of lowering China's carbon dioxide (CO₂) emissions per unit of Gross Domestic Product (GDP) by 60-65% compared to 2005 is a clear signal of the seriousness with which China is approaching the negotiations.

But reaching an agreement is one thing, delivering on it as an international community is quite another. How we go about that is crucial, whether for climate change, green development, or improving environmental protection.

That is why the theme for this AGM is Enabling Governance Capacity for Green Transformation and why the CCICED recommendations to the State Council will take full account of the 5th Plenum and the work on green transformation by our six study teams.

Efforts have focused on three essential factors of governance capacity – laws, finance, and building strong institutional working relationships.

The recently announced *Integrated Reform Plan for Ecological Civilization* is an excellent far-reaching, long-term effort, and it is hoped this management and institutional reform can be accelerated in the next five years to set the new course of “greenization.” This package of eight key reforms will be important for guiding CCICED’s future work.

A few of the key recommendations that will be discussed among Council members over the next two days are highlighted.

On eco-environmental risk reduction systems, an accelerated effort to reduce the number and impact of pollution accidents and the chronic effects of pollution is certainly within reach in the next five years, despite discouraging events such as the Tianjin port explosion in August – for which once again the Council’s condolences are offered to the victims.

Given its strategic importance, the Jing-Jin-Ji area could be a good place to begin the transformation towards an environmental management model that covers multiple risk sources, impact reduction strategies, and the kind of public communication systems that have proved effective, for instance, for storm and weather warnings. By integrating environmental risk analysis and response with economic, industrial, and infrastructure planning, this “supercity” could improve performance, efficiency, and safety in one go.

It is an approach that could also help drive more co-ordinated action with co-benefits on wider issues like air pollution and lowering the impacts of short-lived climate change pollutants (SLCPs) such as:

- methane from garbage dumps and agricultural and industrial operations;
- black carbon from vehicle, ship, farm machine, and construction equipment exhaust gases;
- HFCs (hydrofluorocarbons) phase-out.

The new *Air Pollution Control Act* provides an immediate opportunity for action, as does bringing China's marine and freshwater ships into compliance with international standards, which is understood to be underway.

Creating the right mix of policy, technology, and private sector engagement can deliver significant change, as has been seen with China's successful push to replace old dirty two- and three-wheel motorbikes:

- With well over 150 million electric bikes now in circulation, the old ones have been almost completely replaced in some cities.
- Not only is this establishing best practice within China, it is also a practice that other Asian and African nations are keen to follow. As China continues to export to Africa this greater access to mobility, including, electric bikes, this could lead to a reduction of the pollution footprint.
- This is also creating a new green manufacturing industry with massive export potential.

With all these elements in mind, the Council will discuss recommending:

- Creating a National Environmental Risk Board, which could balance economic and environmental factors while streamlining risk management and environmental assessment.
- Rolling out a more effective environmental risk communication system, which could also support initiatives to improve chemical and industrial operations.
- Adopting a coordinated approach to decreasing SLCPs which could deliver progress for both climate change and the green economy.

The second area of CCICED focus has been management and administrative reform, considering how to improve environmental governance by revamping working relationships among government, business, and social organizations, particularly in light of China's efforts to strengthen the rule of law.

This is not simply a matter of proposing more laws, bigger institutions, or more oversight. As China's GDP grows from \$8,000 to \$12,000 per capita, there is a need to target similar growth in the number and effectiveness of environmental mechanisms, coupled with a more robust legal framework and stakeholder dynamics, as well as a need to address the tough challenges and potential opportunities ahead.

As another illustration, the soil pollution study team believes that proposed soil pollution legislation should become a more complete *Soil Environmental Protection Law* supported by an enhanced environmental standards system and the early release of the Action Plan for Soil Pollution. This would upgrade and protect a fundamental resource which is among the most expensive environmental pollutions to remediate. Using better governance and rule of law for prevention is cheaper and more effective than any cure, since virtually everything that grows on our planet depends on 60 to 100 centimeters of soil. Once polluted, nothing thrives and an entire asset which is fundamental to life on the planet is lost.

The third area is green financial reform strategy for China. China should be commended for its extraordinary effort to initiate green financial reforms and the Council is pleased to see the 5th Plenum's suggestion that a green fund be established.

However, government expenditure alone will not solve the issues ahead; sustainable, practical solutions need both investment and engagement from the private sector. That means it is also essential to build better bridges between the economic supply and demand sides. Securing this co-operation could create additional opportunities to build a strong and secure green financial system that could include green bonds, tax reforms, and a move towards an advanced model of emissions trading, such as the proposed cap-and-trade system for reducing greenhouse gases (GHG).

Already, the task force created by the People's Bank of China and the UNEP Inquiry into Design Options for a Sustainable Financial System, which has grown from 40 to over 100 institutions, is creating detailed execution plans for 14 ambitious proposals to green the financial system. The leadership of the People's Bank of China is being noted by countries across the world.

The 13th FYP is the perfect window of opportunity for further green financial reforms which could allow green development to accelerate and flourish in the decades ahead. Green financing should become an important task of the Central Economic and Ecological Civilization Reform Group, and an entity should be created to link the key regulatory commissions for banking, securities, and insurance.

History may also record 2015 as the moment when Chinese and international cooperation with its roots in the environment started driving international reform in everything from health and the economy, to agriculture, transport, and industrial development.

CCICED demonstrates how a green development experience can be nurtured and transferred to other global challenges, such as health and environment, and the logic of the integrated implementation of the SDGs internationally.

This council continues to strive to offer strategic, relevant, and timely advice that is of use to the State Council and to leaders in China. It intends to further develop and articulate a vision for the future that ensures it continues to be a valued resource for China and the international community

Chen Jining introduced Chinese Vice Premier and CCICED Chairperson **Zhang Gaoli**. Here are the main points of the Vice Premier's speech:

The recent 5th Plenum adopted the suggestions of the 13th FYP on economic and social development, establishing the five concepts of innovation, coordination, greenization, opening, and sharing. Green development, as one of the main concepts, has attracted attention internationally. This CCICED AGM theme of Enabling Governance Capacity for Green Transformation is of practical and concrete significance.

The Chinese government pays great attention to green development, with President Xi Jinping stating that clear waters and green mountains are as valued as gold and silver. Protection of the environment is going to develop the forces of production, and improving the environment will also promote the forces of production.

Premier Li Keqiang also pointed out that a good environment is an important part of raising people's standard of living and quality of life. It is also the real meaning of building a *xiaokang*, or moderately well-off society. Many new proposals and policies are closely linked to the idea of building a green economy. The suggestions in the 13th FYP have pointed out that greenization is the way to achieve sustainable development. It is also an important reflection of people's aspirations toward a better life.

We must continue to pursue resource conservation and environmental protection as a basic national policy. We must maintain sustainable development and the growth of our productive forces while building a better society and promoting harmonious development between man and nature. In this way, we can build a beautiful China and contribute to global eco-security.

At present the concept of green development is widely accepted. People are more aware of protecting the environment. The policies are getting stronger and the implementation better. This has created good results over the last few years, but this has not been easy.

We have adjusted and optimized our economic structure, with resulting environmental benefits. The value of our tertiary sector has already overtaken the secondary sector, reaching 48.1% of GDP in 2014, and in the third quarter of this year rising to 51.4%. The proportion of these three important sectors in our economy is vital, indicating the quality and level of our development. Per capita GDP rose from US\$227 in 1978 to US\$7590 in 2014. The proportion of these three sectors of the economy has been adjusting and rebalancing. Between 2011 and 2014, 155 million tons of steel production, 600 million tons of cement, and 32 million tons of paper pulp were retired. This represents respectively 1.6, 1.6, and 2.2 times the targets set in the 12th FYP. And the energy and environment sectors of the economy are growing by 15% to 20% every year.

One of our big problems is overproduction of steel, cement, and plate glass. Reducing steel production, for example, means thousands of yuan per ton, and we are employing thousands of people. This is a heavy task, but we must do it, because if China's economy continues on the path of overproduction and construction, China cannot grow sustainability, and certainly cannot achieve green development. So the Chinese government is strongly determined.

Energy production is undergoing a deep change. In the first four years of the 12th FYP energy consumption per unit of GDP diminished by 13.4%. During the first three-quarters of this year it dropped 5.7% year-on-year. In 2014 hydropower, wind, and nuclear energy, as well as other clean energies, made up 16.9% of the energy mix – which is already 3.5% more than in 2010. We have promoted lowering the emissions of coal-fired electricity plants by 84 million kilowatts. Another 81 million kilowatts are under transformation. Currently, the energy makeup of China is irrational and unbalanced with an over-reliance on coal – about 60%. We are trying to develop hydro, solar, wind, and renewable sources

including nuclear power. At this point nuclear is only 1.1%, which is small, but over half the nuclear plants in the world that are under construction are in China.

We are also preparing a plan of action to prevent and manage pollution. This has already produced some good results. We have promulgated 10 rules for air and water, and are putting together a plan of action for soil pollution. In 2014 some 6 million old and outdated vehicles were taken off the road. Between January and September this year the particulate matter (PM_{2.5}) concentration in some 74 cities dropped by 16.4%, and 21.3% in the Jing-Jin-Ji area.

China is the largest developing country and the first to have started monitoring PM_{2.5}. We are still however in the early stages of development. In fall, smog is heavy because coal-fired stoves are starting up again. We will continue to move forward and the number of clear days will increase every year.

China is now able to process 48 million tons of wastewater which is one of the highest rates in the world. We have completed ahead of time the target for decrease of emissions in the 12th FYP. We have also worked on ecosystem protection and recovery with encouraging results. We have adopted the strategy and action plan for biodiversity protection and have set up natural reserves which take up 14.8% of our total land area – which is higher than the world average of 12.7%. We are protecting our natural forests. We have returned farmland to forest and grassland which are all measures to repair our ecosystems. Our forest coverage has now increased to 21.6%. There has been zero decrease of desert land. The Food and Agriculture Organization in 2015 conducted an assessment of forest resources and pointed out that between 2010 and 2015 China was the country with the largest net increase of forest coverage, which has now reached 1.54 million hectares.

The Songhua River and the Bohai and Huanghai marine ocean systems have also been given rest and recovery periods, so that now in the autumn we are again able to harvest crabs and shrimp. We have put a lot of effort into controlling GHG in order to contribute to the global effort to do so. We have retirement plans for 25 industries, including chemical industries, home appliances, and pharmaceuticals. As a result we have closed over 100 production lines and retired 250,000 ozone-depleting production units. This accounts for about 50% of the ozone produced by developing countries. In 2014 our sulfur dioxide unit per GDP dropped 33.8% by comparison with 2005. We plan by 2030 that sulfur dioxide emissions will have dropped 60% to 65% compared with 2005.

The 13th FYP is the last springboard for China to achieve a *xiaokang* – moderately well-off – society, and whether we do so will depend on the environment. We will continue to provide more eco-products for our population and promote green development and a green lifestyle. In particular we propose to do the following:

First, we will optimize and develop air and land configurations, use resources in a regulated and balanced way, and control the extent and intensity of development. We will limit spatial structures for urban and agricultural areas. We will set up red lines for agricultural and ecological spaces, and draw up rational plans for urbanization. We will promote eco-safety and good management of our natural coastlines. We will try to avoid the evils of urbanization and cut back on the use of land for urban construction. We will try to concentrate production and population in smaller areas, increase eco-functional areas, and set up lists of prohibited industries. We will continue to improve our environmental assessment process and strengthen standards.

Second, we will promote conservation and the efficient use of resources, set up higher restrictive standards, and control the use of water and energy. We will continue to raise efficiency in the use of resources and promote innovation and creativity, so that we can establish a new society where the conservation of energy use will prevail. We will promote the circular economy and recycling.

Third, we will improve environmental governance. We want to set in place integrated pollution prevention and solution plans and set up joint prevention and control of river basins, air, water, and soil. We will promote parallel development of governance of rural and urban environments, set up big data, set up real time online environmental monitoring systems, and improve the publication of environmental information so as to deal with issues that raise popular concern. We will set up a system of assessment of officials to see whether they really do protect the environment.

Fourth, we will step up the protection and recovery of our ecosystem and improve eco-safety. We will set up the greening of the land, return farmland to nature, control erosion and desertification, and provide better eco-services and stability to our forests, lakes, rivers, wetlands, grasslands, and oceans. For instance, the high plateaus of Tibet are vital to our water supply, and need to be protected. Everybody wants to develop, but in certain places we have to protect our resources. There is overuse of underground

water. We are promoting important urbanization plans – which are first of all to protect your own environment. If you protect your environment in the course of development, your environment can even improve. We need public awareness and good planning. Only in this way can we really serve our population. If you destroy everything in the course of developing, it means the more you produce the more you destroy. A nation and a country cannot sustain itself. The health of our people cannot be guaranteed and our environment cannot recover and repair. This is a great disservice to our descendants.

Fifth, we will set up laws and regulations to protect the environment, and if you go against these you will be punished. We will launch a natural resource ownership and utilization system to promote eco-compensation, performance evaluation, and environmental management assessment. We will establish a permits system for pollution and try to engage major market players in environmental protection. In the provinces we will set up a vertical management system below the provincial level to protect, monitor, and ensure compliance, so that there will be a unified authoritative and legal compliance system in place to ensure implementation of the laws.

Sixth, we will promote and encourage international cooperation and exchange so that we can undertake our global commitments as a responsible player. As Xi Jinping said, the international community should work together to explore ways to set up a *world* ecological civilization. As the largest developing country, China is ready to explore a path toward green, low-carbon, sustainable, and circular economic development, and to promote a new global environmental governance system that will ensure global eco-security.

Dealing with climate change is one of the highlights of China's international cooperation. Among many other high-level meetings that have happened, I participated as a special ambassador of the President at the climate conference in New York. On behalf of the Chinese government I expressed our clear stand on this issue. We expressed strong determination to support the Paris conference and hope that agreements can be reached. Of course an important precondition is, accord to the UN convention, there should be common but differentiated responsibilities and commitments. I believe the meeting in Paris, thanks to everyone's efforts, is going to reach a consensus, and this will be a milestone for everyone.

CCICED is an irreplaceable window, bridge, and bi-directional platform for China's environment and development. The Council needs the support and enthusiasm of its international members. All our

friends here – both international delegates and Chinese representatives – come from different organizations, research institutes, universities, and enterprises. All of you have a lot of knowledge, practical experience, and good ideas in the field of environment and development. I hope that MEP and other organizations and departments will carefully listen to your proposals. Some of your ideas will become part of our policies and actions. The Chinese government supports CCICED and will continue to do so. We hope that the Council will draw on the strengths of expertise, international vision, and strategic planning, and continue to work with us towards ecological civilization in China, and also to set up and build a high level think tank. We hope you will continue to contribute in this area.

Item 4. Addresses and Special Remarks

CCICED Acting International Executive Vice Chairperson **Achim Steiner** introduced China's Minister of Environmental Protection and CCICED Executive Vice Chairperson **Chen Jining**. Here are the main points of the Minister's address:

This year is a milestone in China's history of environment and development. Three major events have taken place:

- The 5th Plenum of the 18th Party Congress adopted the 13th FYP proposal which includes green development as one of the five development concepts.
- The Chinese government issued two important documents: *Opinions on Accelerating Ecological Civilization Construction* and *Integrated Reform Plan for Ecological Civilization*. These documents incorporate many policy recommendations made by CCICED, and they clarify the ideas, principles, goals, and tasks for eco-environmental governance during the coming five years and beyond.
- High-level UN conferences have set a new path for global sustainable development: the Third International Conference on Financing for Development, the United Nations Sustainable Development Summit, and the climate change meeting coming up in December. To turn those blueprints into reality and to turn those efforts into practice, we need good institutional arrangements and governance capacity. That is why we have chosen Enabling Governance Capacity for Green Transformation as the theme for this meeting. This is a farsighted and opportune theme, and is of great significance for promoting our future work.

I would like to share my view about reform, the eco-environmental protection system, and improving environmental governance capacity, focusing on the institutional changes that China needs to undertake from the perspective of MEP. The 18th Party Congress incorporated ecological civilization into the five-in-one overall arrangement for building socialism with Chinese characteristics, and put environmental protection at a more prominent position.

On more than 60 occasions, President Xi has talked about this and put forward new concepts, thinking, and strategies for building ecological civilization and strengthening environmental protection. As well, Premier Li and Vice Premier Zhang have issued key instructions. With the implementation of the air and

water pollution action plans and the new *Environmental Protection Law*, China's environmental quality is much improved.

With the 13th FYP, the Chinese government has a clear goal, which is to build a moderately well-off society in an all-round way. The 13th FYP is a window of opportunity for making substantive progress in building ecological civilization and for environmental protection. Let me make three points:

- The 13th FYP plan proposal talks about five concepts: innovation, coordination, greenization, opening, and sharing. Innovation addresses the issue of driving forces for development. Coordination: unbalanced development. Greenization: harmony between man and nature. Opening: China's interactions with the world. Sharing: social justice and equity. The green development that has been advocated by CCICED all along will become mainstream and the direction for China's economic development, and will play an important role in building the new economic normal.
- To build a moderately well-off society in an all-round way we need to address the weak link, which is eco-environmental protection. By 2020 we need to improve the overall eco-environmental quality. We have great momentum but also challenges and pressure to attain that goal in the next five years.
- The proposal contains a special chapter on encouraging green development and improving the eco-environment, and six measures for addressing that issue: promoting the peaceful and harmonious coexistence between man and nature, accelerating the building of the main functional zones, promoting low-carbon circular development, saving resources and increasing the efficiency of resource utilization, improving environmental governance capacity, and building a strong eco-security defence. All these will promote the integration of environment and development, and will help control pollution from the source and ensure complete, systematic, and effective protection. We will focus on improving environmental quality, starting with reform of the environmental governance system and implementing the most stringent environmental protection system. We will build a governance system with the participation of government, enterprises, and social organizations. We will also improve environmental management to make it more systematic, scientific, market-based, and information driven.

In the next five years we need to further improve the environmental rule of law and protect the environment in accordance with law. Right now, environmental protection work in China is heavily

dependent on macro policy. In meetings of the State Council many national policies are related to the building of ecological civilization and to environmental protection. While the rule of law is the foundation for ensuring the effectiveness of the macro policy, compliance with the law should become the norm. This is the necessary requirement for ruling the country by law. It is also the direction for the reform of environmental governance.

Existing environmental laws and regulations and rules need to be effectively implemented. Then, violations can be subject to punishment. Furthermore, the environmental costs of businesses can be internalized. We have taken 2015 as the year of implementation of the *Environmental Protection Law*, and after more than 10 months the authority and deterrence power of the law have been strengthened.

Every three months MEP meets to discuss the issues identified in the law enforcement process in different provinces and cities. They have identified about 120 issues, so a lot of work needs to be carried out to address those. Next year we are faced with amendments including the *Water Pollution Prevention and Control Law*, the *Soil Pollution Prevention and Control Law*, the environmental impact assessment (EIA) regulations, and we need to discuss the environmental protection tax.

From an economic perspective, how to internalize the external costs for businesses? In terms of environmental monitoring, we need to amend a lot of laws and regulations including the *Pollution Emissions Permit Law*. We need to further explore the area of oversight of environmental law enforcement, especially enforcement across regions and provinces. Also we need to explore effective ways of coordinating environmental administrative enforcement and criminal law enforcement. We should strengthen the traditional guarantees for the citizens' right to launch lawsuits in pollution cases. And we ought to promote the establishment of an effective legal system for environmental protection.

The next five years will be a period of rapid urbanization, industrialization, and agricultural modernization. Development is still the main factor affecting environmental protection. We need to put prevention measures at the macro level, including the implementation of ecological redlining and strategic EIA. Boundaries will be drawn for production and everyday life, as well as for urban and rural construction areas, industrial areas, and rural residential areas, in order to protect farmland, grassland, rivers, lakes, and wetlands. These boundaries are defined as ecological red lines. It is hoped this can optimize the spatial layout and at the same time observe the bottom line for eco-security.

During the 12th FYP period we completed five strategic assessments for programs in the Bohai area and in western and central China, and concluded more than 360 planning assessment programs. We must abide by these results in protecting the environment. This is why we emphasize the importance of strategic and planning assessments at the initial stage of industrial and agricultural planning.

Standards are another important issue. Environmental standards are effective in industrial access and structural upgrading. At present we have many standards that are not scientific enough. On the one hand, some standards are too strict – even more stringent than European standards – and so it is difficult for enterprises to abide by them. This has resulted in frequent violations of the standards. On the other hand, there is a kind of deficiency of standards, which is why in the 13th FYP we will reform China's standard setting mechanism so that the standards can promote the upgrading of different industries and improve environmental quality.

It is even more important for us to promote local standard setting. China is too large for us to use the one-size-fits-all approach. Because of improvement in standards in the paper industry in Shandong province, the emissions rate is less than 4% which is a great improvement compared with before.

During the 13th FYP the Chinese government will centralize the total amount and intensity of energy and water consumption, imposing tighter controls on the intensity of energy use. This is how we can improve governance through preventive and control measures. It is important to improve environmental governance fundamentals in order to improve air quality.

In May, the Chinese government issued the *Integrated Reform Plan for Ecological Civilization*. In addition, the government adopted supporting documents on ecological damage accountability and compensation, a supervising and monitoring network, a balance sheet of natural resources, and an audit of retired government and Party officials. The purpose of the latter measure is to make sure that local officials – while developing the local economy – have also prioritized the protection of the environment. These documents have created good opportunities for us, and we are progressing in these important areas:

First, we will improve the emissions permit system for fixed sources of enterprises, which has been in place since 1986, but is not being implemented satisfactorily. We will also reform the systems for EIA, the total control of pollutants, pollution discharge standards, and pollution charges.

Second, we want to set up a joint, cross-regional mechanism for pollution control and prevention because environmental problems know no borders. We have already had such a mechanism in place to prevent and control air quality, but we need to go further during the 13th FYP to create a mechanism for integrated planning, standards, EIA, monitoring, and enforcement.

Third, we must create a sound market mechanism to protect the environment. We should encourage investment in the environmental market, for example through public procurement. Some environmental monitoring programs will be open to the private sector, which can be cost effective. It is also important to have a primary allocation system and a trading market in rights for energy and water and in rights to discharge and emit. We should improve the mechanism for green credits, and green funds must be encouraged. As for MEP, we are considering setting up an environmental information disclosure mechanism. At present there are irregularities because of companies that do not disclose the information that people want. Also we are in the process of developing mandatory environmental accountability insurance. We will develop a performance evaluation and lifetime accountability system for officials at different levels. During the 13th FYP, China will develop a green indicator system that takes into consideration green development in an area. In the performance evaluation system, energy consumption, environmental damage, and ecological benefits will all be integrated. On the basis of balance sheets for natural resources, local leaders will be audited when they leave their post. Enterprises will be held accountable for ecological damage and Party and government officials will be held accountable for negligence of their environmental duties.

Fourth, we will reform our supervision to improve our enforcement capacity. In the past, more focus was put on environmental violations by enterprises rather than on the fulfillment of environmental duties by governments. From now on we will have supervision and inspection tours every two years. In extreme cases the results of inspections will be televised. A new vertical management system will be launched at the provincial level to address the problem of too much emphasis on economic development, too little emphasis on environmental protection. This system also aims to address the undue interference, noncompliance, loose enforcement, and even cases where people go unpunished after violating

environmental laws. During the 13th FYP we will set up a national real time online monitoring system. We hope that by 2020 all these important elements will be covered by data sharing at all levels.

Fifth, it is important that we disclose information to guide the participation of everybody in the community. A sound environment requires action by all. We will improve education so that citizens become aware of ecological values. We will promote green consumption so that the public can adopt a frugal, low-carbon, and healthy lifestyle. Information about air and water pollution discharges – and about supervisory bodies – should be transparent. We will also set up a mechanism whereby people can share the results of EIA. Already we have set up the reporting platform for environmental violations.

Achim Steiner introduced Germany's federal Minister for the Environment, Nature Conservation, Building and Nuclear Safety, and CCICED International Vice Chairperson **Barbara Hendricks**. Here are the highlights of her special remarks:

CCICED is a truly impressive advisory body. Its work since the Earth Summit in Rio in 1992 has been instrumental in incorporating concepts such as the circular economy into China's environmental legislation. CCICED also played a key role in establishing China's MEP, by upgrading the State Environmental Protection Agency, SEPA. This was a very important step for environmental protection in China and it shows how relevant the work of CCICED can be.

Before I became Minister for the Environment and Building, I spent many years working in various regional and national authorities in my country. One of my positions was that of State Secretary at the Ministry of Finance. This is why I know from my own experience that wise, strategic governance generates huge opportunities for sustainable development. But I am also well aware of the challenges of implementing the necessary changes in the administration – and paying for them.

Currently, environmental policy is experiencing a boost due to the Sustainable Development Summit in New York at the end of September. There we adopted the 2030 agenda, which provides for a change of course towards a truly sustainable development. We have given ourselves 15 years to implement the agenda and steer development in the right direction.

The SDGs we agreed on are ambitious, indivisible, and universal. One of its goals, in the words of the preamble, is “a world free of poverty, hunger, disease and want, where all life can thrive.”

There can be no doubt that we will only be able to achieve this goal if our planet and its ecosystems are healthy. We must change course as quickly as possible, for we cannot deceive ourselves. Our current economic practices are destroying our planet. We have already exceeded the planetary boundaries in many ways. Climate change is the most obvious sign showing us that things are getting out of hand.

The time has come to reconsider our economic practices and our lifestyles. We need a different kind of growth – one which does not create social divides and which respects the planetary boundaries. Only thorough change can the national economy of every country become more sustainable and resilient.

To bring about this new direction, one key factor is good governance. China with its concept of ecological civilisation and Germany with its social and ecological market economy have already developed social concepts that point the way to a sustainable future.

In Germany, we have decided to focus on renewable energies, phase out nuclear power and do without fossil energy sources in the medium term. For we agree with our partners in the G7 (and Brazil agrees as well) that unless we decarbonise the global economy before the end of this century we will not succeed in limiting global warming to less than two degrees Celsius. And if we do not succeed in this, we will face climate change that is no longer calculable and that makes life impossible in many places on this planet.

Therefore, we should give absolute priority to decoupling economic growth from environmental destruction as far as possible. The key to achieving this is increased resource efficiency. We must also considerably increase raw material productivity and become even better at reusing waste. We need to adopt more stringent standards for the durability and repair-ability of electronic devices, for example. And we need to give targeted support to businesses that develop particularly innovative, resource efficient production methods.

.By adopting the SDGs, the international community has sent a clear signal. Implementing these goals is a challenge for all countries, and we will do well to learn from each other while we tackle this task.

Germany has adopted the Joint Rules of Procedure of the Federal Ministries, which stipulate that when draft laws and ordinances are prepared, we must ensure the participation of associations and the expert community concerned, including representatives of industry, science, environmental associations, and other relevant associations. In addition, legislative drafts are increasingly being published on the Internet to give the general public an opportunity to comment as well. The same goes for regulatory drafts that fall into the legislative competence of the federal states.

In the environmental sector, we have learned that it is not sufficient to impose penalties for infringements of our laws. The operator of a factory must be forced to modernise the facilities to become more environmentally friendly, or the factory will be closed down. On the other hand, it must be possible for companies and other players to challenge a decision taken by the public authorities in court. This is also an effective means of combating corruption. If there is a possibility to have a decision reviewed by an independent court, people will accept it as being fair and objective.

Of course there are still infringements of our environmental laws in Germany. The Volkswagen case has shown us that it makes sense to carry out spot checks on the implementation of regulations. We are still in a learning process here.

In Germany we place great emphasis on industry's own responsibility. It helps that sustainable economic practices are increasingly becoming a strategic goal for businesses. For environmental protection measures can go hand in hand with reduced cost, improved image and increased sales. Many companies realise that sustainable corporate governance will give them a true competitive edge and they are voluntarily agreeing to undergo eco-audits.

In Europe, institutions of all kinds – companies, authorities, service providers, and even private households – can be certified under the European Eco-Management and Audit Scheme (EMAS). In no other country are there more EMAS participants. Incidentally, my ministry has been EMAS certified since 2006.

All investment decisions taken by governments should be carefully reviewed to ensure that they facilitate sustainable development, because the structures we are establishing now will determine our production and consumption patterns over decades. We therefore need to reflect thoroughly on what foundations we

want to lay for future generations, for example efficient grids for electricity from renewable energies, charging stations for electric cars, energy efficient housing, sustainable agriculture, greener cities.

Government can steer investments into the right direction. One example is in the area of decoupling growth from resource consumption and Germany's Resource Efficiency Program, which aims to double resource productivity by 2020 compared with 1994.

Germany has set incentives and created innovation awards for new business models which are based on energy efficient technologies or which facilitate multiple uses, for example chemical leasing. We are creating markets for secondary raw materials by introducing quality standards, for example for recycled steel. And we are making sure that those who produce waste are finally obligated to bear the costs for this waste themselves. All this helps us to boost the circular economy.

We need to talk about what people really need to enjoy a decent life. We, the wealthier people everywhere in the world, need to prove that we are willing to adopt a lifestyle that, if copied by people around the world, would respect the planetary boundaries and reduce global imbalances. Policy-makers must become much more courageous in this regard. Ultimately, however, it is the duty of each and every citizen to do his or her share.

However, we can only ask citizens to play their part if we put them in the position to assess their decisions in terms of their impacts on environmental and social standards. The credibility of information, the development of relevant criteria and easy access to information are key aids for enabling citizens to live up to their responsibility as consumers. With the Blue Angel environmental label, the German Environment Ministry has a strong instrument that people perceive as reliable. For many years, the Blue Angel has been an effective information and marketing tool to promote the most environmentally friendly products on the market. I am therefore very pleased that there is also an environmental label in China.

Item 5. Policy Recommendations: Introduction

CCICED Acting International Executive Vice Chairperson **Achim Steiner** introduced CCICED Chief Advisors **Shen Guofang** and **Arthur Hanson**. Owing to limited time, the Chief Advisors elected to forego discussion of the Issues Paper and instead to move directly to the presentation of the draft text: *Policy Recommendations to the Government of China (for AGM Discussion)*.

First, however, **Shen Guofang** made these observations:

2015 is a year to be applauded in terms of progress on environment and development in China. The 5th Plenum pointed to the 13th FYP proposal which talks about green transformation in China and emphasizes the five development concepts – one of which is green development. This concept has been studied and advocated by CCICED for many years, and now it has been adopted by the Chinese government. The 13th FYP period is critical for building a moderately well-off society and for attaining the millennial goals. It is also a window of opportunity for green transformation. During this period many arduous tasks must be accomplished. We need to set the goal that by 2020 China's environmental quality must be improved comprehensively. Therefore we need to improve environmental protection and environmental governance capacity.

Shen Guofang then presented point-by-point the general and specific recommendations (drawn from the task force reports) and their sub-sections. **Arthur Hanson** offered suggestions about creating a shorter version of the recommendations and about drafting a letter for presentation to Premier Li Keqiang in lieu of a visit by a CCICED delegation. As well, he made these remarks:

We should not limit ourselves to conventional thinking about governance. We must bring together the financial side in a way that has never before been done. Also, it is possible to have too much law and not enough capacity to understand or make good use of the law. Compliance only gets you so far. Risk management takes you up the scale of capacity, and then the innovation strategies, leapfrog technologies, and good innovations for management take you to a still higher level of capacity. That is what we need to be aiming for.

Item 6. Remarks by Special Guest

Achim Steiner introduced **Kristina Persson**, Minister for Strategic Development and Nordic Cooperation in the office of the Prime Minister of Sweden, who made these points:

Joint efforts within CCICED show that mutual learning and enhanced mutual understanding can contribute to creating a transformational policy agenda towards global sustainable development. It is inspiring that that governance capacity and green finance reform have become focal areas for the Council's work since they are the two most important strategic issues in enabling green transformation. Effective implementation within government and beyond is required, and policy and market forces must be integrated for mobilizing innovations and sustainable investments with scale and speed.

China and Sweden share strategic thinking and analytical approach. The Swedish Environmental Protection Agency has just finalized an assessment on how Sweden's environmental objectives can be achieved, and it is clear that in order to carry out a comprehensive integration of environment and climate policies, all ministries must align their efforts and work as a whole.

In our latest statement of government policy, we have put forward a long-term and strategic ambition that Sweden will become one of the first fossil-free welfare states in the world. Part of this is a fossil-free independent transport sector that should be achieved by 2030. My own expert groups on future issues have a specific task to contribute to long-term policy development that integrates competitiveness and job creation with both ecological sustainability and social development. One of these groups has just put forward their policy proposals on sustainability driven investments for green transition and competitiveness. This is an area we need to work on together in the international community in the years to come.

There is great potential for deepened exchange and joint policy work of a more strategic nature within CCICED, for instance in the field of China's new plan for ecological progress, China's new thinking on innovative climate green finance, and our future Sweden-China bilateral dialogue on eco-governance.

In addition, this cooperation could result in valuable inputs to China's G20 presidency, and we can together push for a transformational Agenda for Sustainable Development at this important global policy arena.

Item 7. Policy Recommendations: Comments I

Achim Steiner next invited Council members and guests to offer comments, particularly on the draft policy recommendations. Here is an overview of the points made during this session (without attribution to individual speakers):

What we are talking about in the CCICED context is going far beyond incremental change within already defined corridors. I suggest four cornerstones for what we might call transformative governance:

First, the reform of administration. Monitoring and supervision, enforcement and the rule of law, standards, market mechanisms – the whole administrative setting needs to be transformed in a certain direction.

Second, how to create legitimacy and alliances of “actors of change”?

Third, since it is new, how to manage uncertainties? We need demonstration projects and pilots to show that it works, to demonstrate that wealth creation and employment and this kind of transformation can go together.

Fourth, we need knowledge for transformation. In administrative units, universities, and so on, we need to create new kinds of knowledge pools to make this agenda happen.

All the issues we read about in the recommendations are relevant not just for China, but for other countries too. China has an advantage since it is already in a transformative mode, which might help make this agenda happen.

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On the road from policy to impact, we have to focus on implementation. This is a challenge for the development agenda for the whole world, not just for China. I want to highlight the importance of supervision and coordination, but also the importance of empowering, strengthening, and engaging environmental governance and management capacity at the sub-national level, that is, provincial and

municipal governments and organized communities. We need to concentrate on the role of locally and nationally rooted civil society organizations in supporting multi-stakeholder initiatives focusing on implementation at local levels. There is huge interest in these issues at the municipal level in China. It confirms our view that the sub-national level is rising to the challenge of implementing the policies of the central government.

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Vice Premier Zhang observed that there is a profound link between the shape of the economy and the quality of the environment. China must move towards an economy of innovation and services, and away from heavy resource consuming sectors and industries. And echoing Minister Persson's comment, China is in an extraordinarily powerful position over the period ahead as chair of the G20 group, and it would be interesting to see whether China sees any link between these broader economy-versus-environment issues and her stewardship of the G20 group.

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The proposals offered today by Minister Chen are comprehensive and should be supported. Among them he mentions green industrial production. The 17 new SDGs being adopted for the UN's 2030 development agenda include goal 9, which is: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation. China's goals and those of the UN are closely related, and we should be happy that greenization and industrial production are receiving focus from CCICED.

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How to make that green transformation? The 18th Party Congress makes it clear with its 5-in-1 framework. The new SDGs recently adopted in New York talk about a 3-in-1 framework. They are more or less the same idea, but China's is deeper because it relates to ecological civilization. Development and green growth should be sustainable within the framework of poverty eradication. Now is a superb opportunity to do that. But for a green transformation to be mainstreamed, it should be at the top of the government's agenda, involving not only the Minister of Finance but also the chairman of the National Development and Reform Commission (NDRC). The environment should no longer be a sector of

government. We need a platform to get all the stakeholders together: state and provincial and local administrators at all levels.

For all the problems in China, with air, soil, and water, we want to cure the disease, not just the symptoms. The root of the problem is the ecosystem, which is sick. Nature is an organic body.

The Party Congress stressed delegating government authority to the market and to social organizations. We have found that government awareness about the environment is starting to be raised, but social organizations are still at an early stage. So how can people become aware of green transformation? Everyone knows that they can take steps such as save water, but also they can vote every day – by shopping, particularly for low-carbon products.

At the end of the discussion, **Achim Steiner** made these points during his wrap up:

We are in a significantly different phase in terms of China's construction of its development agenda – of transformation. It is now China's stated objective to address financial sector transformation, domestically as part of the FYP, but I have also been impressed by China's decision to establish a study group during its G20 presidency to look at green finance internationally.

Similarly, Minister Chen talked about top-level design domestically. There is a conversation that involves China not only in terms of its domestic development strategy; it also brings China increasingly into the formula you might call "China and the world." This is partly what we have heard in the discussions today.

Item 8. Task Force Reports

Task Force on National Governance Capacity for Green Transformation

CCICED Acting International Executive Vice Chairperson **Achim Steiner** chaired the first part of the presentation of the task force reports. He introduced the task force co-chairpersons. **Xue Lan** is Dean of the School of Public Policy and Management at Tsinghua University. **Peter Hennicke** is former President of the Wuppertal Institute and guest Professor at the International Institute for Industrial Environmental Economics at Lund University.

Peter Hennicke began by outlining the concept of green transformation and some of his group's international experiences:

The objective of the task force has been to identify deficiencies in national governance capacity for green transformation and propose policy recommendations to address them – if possible based on international experiences. Green transformation aims to maintain the sustainability of natural ecosystems while creating an inclusive prosperity.

At the heart of the strategies is a multiple decoupling process, first of all, decoupling GDP from the use of primary resources by increasing resource efficiencies. In the emerging economies we have to reduce the increase rate of the use of energy and resources.

We can think of green transformation as the linkage among three types of capital: natural capital, the goal of which is to ensure ecosystem resilience; economic or produced capital, the goal of which is to improve resource efficiency; and then human well-being, or social and human capital, the goal of which is to enhance social equity and fair burden sharing. It's a new type of technological process – not just greening the growth, but having quite a different pattern of growth, one which is environmentally benign but creates jobs and new business fields.

When it comes to international experience, we need comprehensive, reliable, easily accessible, and trusted data accessible to all interested stakeholders. So we looked at the European Environment Information and Observation Network (Eionet) which was established in cooperation with the European Environmental Agency. Eionet has strict reporting obligations for member states, and it provides a broad variety of information products that are accessible to everybody. Eionet might be a good practical example for countries like China to provide sound and independent information on the environment

through the coordination of national data inflows, the provision of provincial level expertise and advice, and linking centralized sources together, all to support better informed decisions and activities at all levels.

Our group visited North Rhine-Westphalia, a coal region that has been completely restructured. It is a good case study for China. This state used to be the heart of steel and coal in Germany. About 90% of CO₂ emissions from Germany are generated here. The question was how to develop a climate protection plan with the broad participation of all stakeholders that would agree on the reduction of CO₂ by 25% by 2020 and 80% by 2050. For two years, 400 stakeholders worked in groups to study issues such as energy, industry, construction, transportation, agriculture, private households, climate mitigation, and climate adaptation. This broad public participation helped set a binding target for the government in this region. Expert know-how was considered and the process had maximum transparency – it was “carbon democracy” in practice. The public engagement maximized the level of acceptance.

At the city level, one of the important role models in Germany is Bottrop, which has taken big steps forward with the co-benefits of climate protection strategies, especially when it comes to living, working, energy, mobility, and city planning – and in the complex restructuring of the building sector. In Germany when we decided on the *Energiewende* (energy transition) it was clear to us that retrofitting the building sector would take time. The renovation rate in Bottrop has accelerated to 8% per year, by having workshops, by raising citizen awareness, and by demonstrating that it is possible within a relatively short time to decarbonize a whole quarter of the city by retrofitting the buildings.

Next, **Xue Lan** spoke about national governance capacity and presented the task force’s recommendations. Here are his main points:

The national governance system involves governments, markets, and civil society, each with a certain capacity. Government provides the capacity to make and enforce rules. The market brings the capacity to internalize environmental externalities. And civil society provides the capacity for participation in environmental protection processes.

Some key factors affect the capacities of these actors: a good institutional environment; a good incentives system; adequate resources corresponding to responsibilities; and competencies and environmental awareness on the part of stakeholders. Under this framework we have identified some deficiencies in our national governance capacity.

The capacity of the state to make policies in a scientific and democratic way is inadequate. In addition, the participation of multiple stakeholders lacks an “institutional guarantee.” Furthermore, the capacity of the executive branch of government to implement policies is unsatisfactory. The current institutional agreement restricts the role of environmental administrative agencies, and there is inadequate consideration of environmental performance in the promotion system. Regulatory responsibilities are not matched with sufficient resources at all levels of governments. Besides, the competencies and awareness of civil servants as related to green transformation are not adequate.

Another important player is the market; its capacity to incentivize green innovation and internalize environmental externalities is inadequate. Economic incentives are insufficient, and the enforcement of environmental regulations is too weak. Enterprises have difficulty translating a good reputation in environmental protection to real economic benefits. And many small and medium sized enterprises are not adequately supported.

There is still a shortage of laws and regulations facilitating the participation of the public in environmental protection. And, the public lacks the resources necessary to take part in the process.

We recommend that China initiate a comprehensive reform program to improve the overall national governance capacity. In the 13th FYP the government pointed out that the governing capacity for green transformation should take the lead in building a basic institutional system, in different sectors. This is the goal for 2020. In recent years, a lot of systems and initiatives have been staged, but it is more important for us to have an integrated reform program.

This is the roadmap for improving governance capacity: institutions, incentives, resources, and public awareness. We must have strong political will combined with sound scientific analysis. We also need top-level design supported by diversified local plans, a clear direction for transformation, and flexible implementation measures.

Here are four key points:

Let science lead. We should establish a scientific advisory system and make the best use of maximum information disclosure so that we can win public support.

Empower the public. We should establish guaranteed legal rights for the public to participate in the formulation of laws, regulations, and policies. Government should support environmental and social organizations by providing resources. And it is also crucial to change the general public's perception of consumption.

Incentivize business. We should improve property rights and reform the pricing of natural resources, making environmental costs explicit. Adopt the strongest enforcement to raise the cost of pollution, and have the proper incentive mechanisms in place.

Reform government. The State Council should take the lead in reviewing the responsibilities and obligations of departments and governments at different levels. This is to make sure that the rights, responsibilities, and abilities of departments are well matched and developed, and that the resources respond to the responsibilities. Last but not least, we must have more education for public servants to improve their values.

Comments on the Task Force presentation

Both environmental and economic governance are important. During the 12th FYP almost all indicators were satisfactory. In recent years GDP growth has decreased from the double-digit rate to less than 7%, which means less resource consumption. Economic governance should provide a benign macro-environment so that we can manage the environment efficiently. The Premier's recent work report was the first time the Chinese government integrated reduction of carbon emissions into the national goals. According to the government, emissions reduction and energy conservation will be further integrated into local plans.

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The issue of governance is most important. The analysis discusses deficiencies; only when you know those can you take the right measures. We should also note the four key elements mentioned at the end, all of them critical issues.

Data sharing and disseminating information are important. Eionet makes use of good practices that can serve as a useful model, including interesting applications that could be developed in China.

The quality of the system is key. In Europe we are talking about better regulation, from the moment a new rule is being considered. We expect evidence-based decisions, rigorous impact assessments, and economic analyses. We even have independent bodies, like the European Impact Assessment Board, that scrutinize even before legislation is proposed. Crucial too are public empowerment and consultation, even before legislation is adopted.

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The report acknowledges that you can have the best regulation in the world, but if it is not understood, implemented, and enforced, its worth is relative. And that goes to the point of capacity building that many have raised.

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Four points about China's transformative process:

First, how to mainstream across ministries all these issues related to resources, emissions, impacts on ecosystems, and so on? This is the step from classical environmental policies to sustainability strategies. This requires close cooperation across ministries.

Second, during the German *Energiewende*, in the first transition, there were hybrid regimes. That is, you still have the old incentive schemes while you are coming up with new incentive schemes. The challenge is managing the transition, and moving from these hybrid regimes to the new sustainability regimes that you want.

Third, we must emphasize systemic change. For example, in the case of cities it was buildings, mobility, and public transit – but now we think of these all together. By identifying these systemic clusters we can leverage transformative change.

Finally, we must consider principles of sustainability governance. In the report I found four: phasing out GHG, establishing a circular economy for nearly all resources in use today, resource and carbon efficiencies that can buy time, and the protection of ecosystem areas. These four categories describe how to transform from an old governance system into a scheme oriented toward sustainability.

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When you ask for public participation, your rule-making process must facilitate public initiatives. This is a problem typical of many countries. Some countries' environmental ministries are based on 20th century rule making. But now instead we are trying to establish a rule-making process that invites the public and companies to stimulate innovation and participation. China's next FYP needs a permanent flexible response from the government on everyday innovation and information.

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Establishing good governance mechanisms that trickle down to municipalities and small entrepreneurs is the key. Perhaps the report should include a fifth recommendation: special attention should be given to enabling civil society, non-governmental organizations (NGOs), the certifiers, the auditors – the people who are the essential instruments of policing and handling good governance. We need auditors. We need handholding by NGOs to guide us to good green behavior that a lot of entrepreneurs don't know.

Entrepreneurs need handholding, but they also need controls. We have all been amazed by the Volkswagen "experiment" in the United States. Even in an advanced governance society, without proper civil society and independent auditors to control what a major car manufacturer is doing, you can't stop the bad behavior.

So we need to build capacity. It is the role of government to enable and register more NGOs, the role of universities to train these people. Auditors and certifiers and NGOs will have captive clients for many years. These clients will generate good fees, because they need to be audited every year.

At the end of the discussion, **Achim Steiner** invited the task force co-chairpersons to respond. First, **Peter Hennicke** spoke:

Regarding scenario-based dialogues, my experience as a member of advisory boards is that without quantitative targets, without constructing alternative perspectives (with scenarios) it is not possible to reconcile conflicting interests. Scenarios, if they are discussed in hearings, if they are used as empowerment for citizens and stakeholders, can be a learning instrument to reconcile conflicts. We constructed about seven scenarios about how the future of North Rhine-Westphalia would look in 2050. We highly recommend using this instrument with scientific, evidence-based policy, because it makes clear what the alternatives can be and where conflicting interests need to be reconciled.

In Germany we learned two important lessons. First, it should be a common project where all interests are taken on board. The main driver of the *Energiewende* is the decentralized sector, for example, citizens' cooperatives and green villages based on renewable energy. Second, it is not only energy efficiency that is important, but the combination of energy efficiency and efficiency of resources or materials. These synergies create new jobs and more competitiveness and add to environmentally benign policies.

Finally, task force co-chairperson **Xue Lan** made these points:

We are optimistic because the Chinese government has the political will to push for transition. But I warn people: we have to be aware that institutional development and institutional transition are difficult and they take time. A lot of people talk about "adaptive governance." That's why we propose this comprehensive experiment, with different hybrid systems, to see what works and what doesn't work. China is a huge country. It's unlikely that a major transition can happen overnight.

We want to make science the basis of any policy-making process, including NGO participation. The science does not just include natural science but also behavioral science and economics. When we talk

about governance we usually start with the government. However if we think instead about starting with the general public – to enable the public – and also providing the right incentives for business, then there is a lot less to be governed by the government.

Task Force on Green Finance Reform and Green Transformation

Task force co-chairperson **Chen Yulu** is former President of Renmin University of China and now Deputy Governor of the People's Bank of China. **Andrew Steer** is a member of CCICED and President and Chief Executive Officer of the World Resources Institute.

Chen Yulu began by outlining the challenges facing green finance reform and the task force's recommendations:

Challenge 1: the big need for green finance. We made estimates for two timelines, for 2014-2020 and 2021-2030. We also divided it into low, medium, and high scenarios. The low scenario requires RMB14.6 trillion in the period 2014-2020 and RMB40.3 trillion in 2014-2030. The middle scenario requires RMB24.3 trillion in 2014-2020 and RMB70.1 trillion in 2014-2030. The high scenario requires RMB30 trillion in 2014-2020 and RMB123.4 trillion in 2014-2030.

Challenge 2: the shortage of supply for green finance. According to the task force's calculations, investments amounting to RMB3.7 trillion and RMB3.0 trillion would have been necessary in 2013 to meet the standards and goals in 2015, in contrast to the RMB0.9 trillion that was actually spent from both public and private sources. Thus, there are RMB2.8 trillion and RMB2.1 trillion capital gaps.

Challenge 3: green finance development lacks a comprehensive legal foundation. A number of problems persist today, such as incomplete legislation, ineffective operational structures, and so forth.

Challenge 4: we urgently need a coordinating mechanism at the central level. For green financial reform we need the support of many government departments. So far we do not have such an overall coordination mechanism.

Challenge 5: green financial reform in China lacks a clear strategic roadmap. It will be a long-term process to establish this reform. It must happen in conjunction with green transformation in China as a whole. Also it must be commensurate with the reform of China's financial system.

Policy recommendation 1: we must put in place a strategic roadmap for green financial reform. Domestic academia believes that 15 years are needed to reach a medium developed level on the basis of China's green transformation – that is, up to 2030. We suggest three phases: 2016 to 2020 for the launch of green financial reform, 2021 to 2025 for the deepening of reform, and 2026 to 2030 for the comprehensive greening of the financial system.

For the first phase (the launch) we suggest three benchmarks: we have to put in place a price mechanism for resources and the environment, we need six “breakthrough areas” upon which to focus policy reforms and the development of market tools, and we must launch pilot projects in the national strategic areas.

The second phase (the deepening of reform) is characterized by the capitalization and “financialization” of natural resources, the national expansion of strategic regional pilots, the conversion of green finance from environmental management support to low-carbon development support, and support for innovation in policies, financing platforms, and market instruments.

During the third phase (which aims to complete the greening of the entire financial system) we must build a green finance culture and value system on the basis of China's construction of ecological civilization, complete the greening of financial institutions, and play an important role in the global green financial system.

Policy recommendation 2: we must set priorities for the period of the 13th FYP. This includes three components: breakthrough priorities during the 13th FYP, incorporating green finance into the joint statement of the 2016 G20 summit, and pilot testing green finance reforms.

Regarding the first component, the six breakthrough priorities during the 13th FYP include: promote a green bonds market, launch a national green development fund, speed the greening of the banking system, establish compulsory environmental liability insurance, develop green public-private partnership (PPP) project financing, and establish a carbon trading system and promote carbon finance.

Initially, we must focus on promoting the three first priorities. The trend towards direct financing will grow significantly in the coming 15 years, particularly through the bond market. Bond markets provide long-term and stable capital at a reasonable cost, and are therefore suited to green investments. We call for regulatory authorities to issue guidance on green bonds and also to establish a monitoring and evaluation system for them.

The draft version of the 13th FYP also mentioned establishing a green development fund. We propose that the scale should not be less than RMB300 billion, which could be funded by fiscal funds, development funds, or from other financial institutions and businesses. It could be incorporated as a company, based on market mechanisms. The scale of the investment could be medium- and large-scale, medium- and long-term strategic green projects which meet the standards of national green development and green transformation targets, as well as green projects that have substantial demonstration effects. It should be professionally managed, based on market mechanisms. It should not aim for high profit but it should be commercially viable. It should also maximize the ability to leverage private capital by means of PPP, or PPP in combination with project management. An equity-focused fund can also increase project capital, so on the basis of RMB300 million to leverage more private funds to multiply the financing.

It is also a priority to speed the greening of the banking system. China's financial system relies primarily on indirect financing and the banking system plays the lead role. Credit will remain the primary source for green financing for the foreseeable future. That's why we recommend that we increase the environmental legal liabilities of banks, establish professional green credits departments within banks, and increase the interest subsidy for green loans and improve the interest subsidy mechanism.

The second component of recommendation 2 is the need to incorporate green finance into the joint statement of the 2016 G20 summit. Already we have launched the preparatory work for the 2016 meeting. We are calling for this item to be incorporated into the joint statement of the summit so as to encourage international financial institutions to develop green finance. This is of global significance.

The third component is to pilot test green finance reforms in one or more strategic economic zones, such as in the Jing-Jin-Ji area and free trade zones.

Policy recommendation 3: we must speed the establishment of the enabling conditions for green finance. We should focus on four areas: establish a green finance reform coordinating mechanism at the central level, optimize the pricing and charging structure for green industries, enhance the structure of fiscal and tax incentives for green finance, and build a bridge between green financial supply and demand systems.

Next, **Andrew Steer** offered these points:

We found ourselves asking four questions as we went along.

What do we really mean by green finance? Many people think that green finance is simply identifying what are the needs for pollution control, and so on, and then finding the money for it. We saw early on that greening the financial system affects the entire financial sector. That's why we suggest a longer-term, 15-year strategy.

What is the problem here? Why is it not happening? There are problems on the demand and on the supply side.

On the demand side, while needs are huge, around the world investors are not asking for enough money from the financial sector. This means that the starting point for green finance has to be basic environmental regulations and laws - they must help turn need into demand. I'm told in Chinese the distinction between need and demand is not so clear, but there really is a difference between having a need, and a demand for finance.

There is also a problem on the supply side. There are two elements to this. Why are financial institutions not supplying enough money? Several reasons are a lack of familiarity, a lack of measurement of environmental risk, the inability to assess risk. That's why we have all the proposals relating to disclosure requirements, capacity building, liability requirements, and so on. But another issue on the supply side relates to an inherent conservatism in the financial sector. Bankers are much more cautious about lending for new technologies – and of course many of the green technologies are new to them. This is why in the short term one needs incentives, fiscal policy, green bonds. And that's why we recommend so strongly a green fund for China because it has the capacity to be flexible. It can provide equity financing which in

turn can draw in money from the banking system. So too it can provide a lot of risk management services which will encourage debt financing.

What should we prioritize? Clearly in China's structure, where banking is so important, this must be the starting point. But of course to build capacity takes a long time and one must jumpstart the system with all those elements we spoke of before. In all these areas we brought in a lot of international experience to show what others are doing.

What does this have to do with China's role externally? We looked at OBOR, the Asian Infrastructure Investment Bank, the New Development Bank, and direct financing. Of course China has said they don't want to take off the shelf existing multilateral banking systems, but on the other hand China will be lending into and investing into countries that don't have the capacity that China has. So you can't simply rely on domestic environmental regulations. There will have to be the building up of capacity, so these institutions offer some opportunity for real innovation in how this is done.

Finally, on the G20, we congratulate China for deciding that green finance will be on the agenda. We recommend that it examine issues such as common disclosure requirements, the viability of requiring environmental stress tests just as we do for financial stress tests, and also looking at international standards for green bonds and so on. We are thrilled that the People's Bank of China and the Bank of England will lead this exercise. We believe the financial markets 15 years from now will be quite different from the way they are today. China will be a real leader in this.

Comments on the Task Force presentation

The presentation mentioned three interesting elements: the progressive liberalization of the Chinese capital system, the Asian Infrastructure Investment Bank allied with the OBOR initiative, and the G20 conference. In the long term, coordination of these initiatives would seem to be unavoidable if any green development financing mechanism were to be sustainable and more effective than they have been in the past.

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The green fund approach allows for flexibility. I strongly recommend against a green bank. Green banks are seen as competitors in the market. In the beginning there is not enough green business to fill up the day-to-day business of a green bank, so it will start fishing in other banks' ponds, and they don't like that. I strongly recommend against the institution of another monumental World Bank-style bureaucratic outfit.

Indeed, the banking community is conservative. This community knows that green bonds are priced at par with regular bonds. There is absolutely no difference between a green bond and a regular bond, with the exception that green bonds are more expensive to operate. So, one should be careful with the green label. It can be misleading.

So you must be careful how you set up the instruments. The winning strategy is to create smaller boutiques, green boutiques, green platforms, asset management or fund management platforms, which can be faster and more practical in "contaminating" the banking world with the green bug. You will spread the green influence much faster through smaller players. The banks will receive them because this is fantastic fee-generating business. And if you have a half-dozen different boutiques playing this game in China, you will create competition, and you will create much faster integration. You will remove the bad apples fast and the winners will be ahead.

Be aware that the financial markets, when they see something good, move fast. Last year the total volume of green bonds issued was US\$40 billion – which is peanuts. By 2020 it is estimated the markets will issue US\$1 trillion. And 2020 is tomorrow. Of that trillion dollars, it's estimated that China will take over two-thirds. So the market can move much faster than your progressive strategy. You have to be careful not to create situations of backlog or inability to deliver.

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To green the whole financial system is not easy. It seems about right to estimate it will take 15 years. I suggest that besides green funds, green banks and so on, to think about something fundamental. President Xi said that clean water and green mountains are gold and silver mountains. In other words, fighting pollution involves restoring the whole ecosystem. A huge amount of money is needed. The strength and beauty of this report is not that the government provides money, but that we must mobilize

the whole of society's capital. No country has that capacity like China. It really can deliver its political will. As the report says, greening the financial system involves not just the financial sector, but the whole of society – the political will. The first problem we have to solve is ethics. This is a fundamental overarching issue. Once we solve that, then we have a methodology, and the green funds, green banks, and so on, are just mechanisms. So I strongly suggest the natural capital approach.

The sections of the report on governance are very good, but they may lack reference to a “thought leader.” If you meet a governor, a mayor, a university president, especially a business leader, they understand ecological civilization to be something noble – but unrelated to themselves. So thought leadership is a revolution, a renaissance. If you want to solve the problem, it takes a whole system, not just environmental measures. The earth's carrying capacity is limited so that is why it needs a nature-based solution to solve that.

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The third recommendation makes the important point that green finance is part of a wider ecology of enabling conditions – things like fiscal and tax instruments, pricing and charging – and frankly it will be these conditions that ultimately tilt the risk-versus-return equation in favor of green investment. The report spells out the characteristics of the green fund that is proposed. We think it is right in terms of good governance mechanisms, financial and environmental performance targets, annual reporting and auditing, flexibility in using different financial structures to suit the needs of different investors, and orienting operations so that it will aim for commercial sustainability while still delivering public benefits.

Here is one piece of advice: implementing the first moves is very important. The key is to start with investments in sectors with clear revenue streams that can help build markets quickly. These are sectors like renewable energy and energy efficiency in commercial buildings. It's a question of having a clear revenue stream so that you can rapidly move the market, but ideally, be able to exit from that and move on to something where the risk-versus-return profile has yet to be changed. It's important to get those runs on the board early, and that will build credibility. The fund's aim should be to achieve success and retire from the field.

Task Force on Rule of Law and Ecological Civilization

CCICED International Vice Chairperson **Barbara Hendricks** chaired the second part of the task force presentations and introduced the co-chairpersons. **Sun Youhai** is Director of the Institute of Applied Law at China's Supreme People's Court and Professor at Tianjin University. **Donna Campbell** is former Independent Chair of the New South Wales (Australia) Marine Compliance Taskforce and former Executive Director of the New South Wales Environment Protection Authority.

Sun Youhai began by outlining the task force's focus and recommendations, in particular its emphasis on improving legislation. He made these points:

We all know that legislation is becoming more important in Chinese society and administration. The first issue we need to resolve is legislation – in other words there must be law to refer to, and there must be good law to rely on. We face three problems in legislation.

There are gaps in environmental legislation. We need to set up new laws that don't exist now. For instance, in the case of the Tianjin port explosion in August 2015, preventive measures should have been in place, but we don't yet have a legal system to prevent these kinds of incidents. Another example: for many years we have been trying to manage a system of emissions permits, but this involves EIA, management, criteria, standards, the relationships among various departments, and then overall control. All these internal issues have not been resolved properly in the permit law. Another problem is that we haven't got good criteria in place and we are not managing these well. Another issue: what negative impacts do EIAs have? How do we prevent these impacts? Soil is important but we still lack a proper soil protection law. These are all gaps.

Environmental laws are trumped by other laws. We have promulgated many important environmental laws and regulations – but then, another set of laws is proclaimed that actually damages our environmental laws. For example, we have an export trade law that promotes greater export volumes, but what effect does this have on the environment? We are working hard on a civil code, which advocates efficient use of resources, outputs, fair trade, and individual rights and obligations. But if these rights are not properly laid out, and if wealth increases, the effect on the environment could be quite severe.

We have conflicts between environmental laws. For example, in the case of water usage, we need a water plan, but we also have an integrated usage plan, and we have environmental plans – we have dozens of plans. These conflicts have become complicated and it means the people trying to enforce them are actually left powerless.

Recommendation 1: establish a comprehensive and unified regulatory framework for toxic and harmful chemicals.

When severe environmental incidents occur, the government should hasten the development of legislation to deal with these emergencies. There are actually two issues: the prevention of incidents involving hazardous chemicals, during their production, use, transport, storage, disposal, import, and export; and coordination among environmental officials, the police, and so on, to deal with a crisis after it happens. We need legal responsibilities for producers, operators, users, and regulatory agencies. We need legislation for a life cycle management system, from use, transport, storage, disposal, import, and export. We need accident response measures. We need a complete and integrated management system for prevention, protection, and security. We believe environmental management and environmental security should go together.

Recommendation 2: improve the EIA system. A lot of departments have actually resisted or opposed EIA. The rules at this point are too general, too vague, so we hope that the laws will be revised and more detail will be given about the whole process of assessment and what happens if these laws are violated. We have had one major breakthrough, which is that EIA will be included in the new *Environmental Protection Law*. We also feel there should be an integrated set of EIAs, which now are dispersed and fragmented. We have water assessment, soil erosion assessment – many different kinds of assessments, all managed by different departments. This makes it difficult for businesses and for the public. We would also like to stipulate the legal responsibilities of different government departments. These too should be laid out more clearly so there would be a sense of legal responsibility and punishment in the case of infraction.

Recommendation 3: hasten the promulgation of environmental standards and emissions permits. We should set up criteria for emissions and other issues, and these should be mandatory. Once these standards have been approved by MEP they should go to the State Council and be authorized by them. As it stands now, we have many criteria, of different kinds, but they are rather like taxation law: many enterprises are not implementing or enforcing them well. We want to raise the authority of these laws and make it clear that when you break them or violate these standards, you will be shut down or you will pay. We also want to

streamline and optimize the use of legal tools through better integration with the permitting process. These legal tools include EIA, pollution registration, and so on. We would also like to extend the scope of participation and inputs into this whole process, including national as well as provincial. The legal status of permits should be raised so that everybody realizes a permit is needed. Emitting organizations should have an integrated permit that includes air, water, and soil pollutants. All governments at various levels – particularly environmental departments – should have their responsibilities laid out clearly. We need to integrate the whole of the emissions criteria: total emissions, management of the emitting organizations, equipment, and so on – all this should go into the permit. We should also look into the process for issuing permits. And we should lay out clear legal responsibilities.

Recommendation 4: resolve the conflicts among environmental laws. The fragmentation of these laws now is serious, and a lot of energy is wasted trying to deal with these contradictions. We need a comprehensive environmental code to resolve these conflicts. Many countries have passed such codes, and for them, the next point is resolving the various clashes of interest. They have that problem, but our problem is that things are too dispersed now, and we need to put it together.

Recommendation 5: prevent environmental laws from being trumped by other legislation. We have to make it clear that the environment is a public resource. Information should be transparent, and should be out in the sunshine for everyone to know, because the environment is used by everybody. So we need to integrate and mainstream ecological civilization and green development – starting with a draft civil code – to make sure that any new law will not cut into environmental laws.

Donna Campbell continued the presentation and focused on how to implement environmental laws with enforcement and compliance. She started by making four observations:

First, a well-designed system of environmental laws is one that provides the tools necessary to achieve environmental goals. Implementation is about how the tools are selected to prevent and fix environmental problems. In a perfect world, legal tools are selected and used when they are the most cost effective solution to a particular problem and they are applied in a fair and predictable manner. They do not, for example, impose unnecessary regulatory burdens on industry or small enterprises. This means that a critical factor in successful implementation is the behavior of the regulatory agencies that put the

laws into operation. These agencies ultimately determine how legal and other tools are used and how compliance will be monitored and enforced. Each agency has to decide where and how to focus its compliance and enforcement effort based on its resources. Environmental agencies the world over must face one inescapable fact: they must make choices. This is because they often have ambiguous or conflicting mandates, or because of the need to respond quickly to changing circumstances, or because it is impossible to do everything.

Second, environmental problems are complex and particular. This distinguishes environmental law implementation from other areas of law. Indeed, implementation continues to be a challenge for environmental agencies the world over. In recent years it has become a principal focus of study and debate both nationally and internationally.

Third, general laws sometimes state principles and environmental goals without considering the requirements for implementation. These general laws often prove to be aspirational rather than attainable, particularly when responsibility for implementation fall on local agencies faced with unique local problems, and lacking authority, capacity, and resources.

Fourth, in future, we need capacity and willingness to enforce and validate compliance with the law if market-based mechanisms, such as pollution trading programs, are to succeed.

Now we turn to our findings. In brief, we found that China has many of the same legal tools used elsewhere in the world, but their use is not optimized. One reason is that the laws are not designed as well as they could be. In addition, compliance, while improved in some areas, tends to be generally weak. The reasons include unclear and fragmented responsibilities at all levels and a lack of coordination, with each government department protecting its own patch. While responsibility for implementation falls primarily to the local level, these levels often lack the capacity and resources to match their responsibilities. The problem is further exacerbated by improper administrative intervention. All this results in weak accountability and weak public trust.

We have three additional recommendations to present. We believe they are equally important. And we are pleased to learn they are consistent with the directions foreshadowed by Minister Chen and also with the recommendations of the national government's task force earlier today.

Recommendation 6: we must clarify responsibilities at all levels. This relates to government responsibilities, capacity, and supervision. As well, we should strengthen capacity and authority to match these responsibilities (and it's not just capacity of the government but also capacity of all the actors in the system, the environmental consultants, auditors, and so on). It is important to make direct supervision and leadership the clear responsibility of environmental departments for enforcement at or above provincial level.

Recommendation 7: clarify accountability for both Party and government. If you haven't got authority it's hard for you to exercise your responsibilities.

Recommendation 8: increase compliance and public trust. Environmental agencies need to harness community support as an important cost effective tool in achieving compliance. This can be achieved by bringing public supervision into full play by actively promoting public education, disclosure of information, multi-party participation, and public interest litigation. Given that regulatory agencies will have strong and independent powers to carry out their responsibilities and they will exercise discretion in using their powers, it is vital that they be made accountable for their decisions. This will ensure that environmental goals are achieved fairly, that a level and predictable playing field is created for industry and the regulated community, and that corruption is avoided.

The work of the task force will continue next year when we will focus on strengthening environmental justice, improving citizens' awareness of the environment and the need for compliance with environmental laws, and promoting ecological civilization.

Following the presentations by the task force co-chairpersons, **Barbara Hendricks** made these points:

This report makes clear that Chinese environmental law is undergoing extensive change. Now we are setting the course so that environmental law receives more weight and will become a crosscutting issue in the overall legal system. The objective is to create sustainability and establish the environment as a topic in Chinese law, because that applies to the Chinese concept of ecological civilization and is also in line with the 2030 agenda adopted in New York in September. China has reached a point where many OECD

countries were not long ago. In industrialized countries in recent decades we had to strengthen our environmental law as well, and get away from end-of-pipe principles or repairing strategies to go to integrated solutions and set up systemic preventive measures.

Comments on the Task Force presentation

The report recognizes that enforcement is important. We also need to think about both the institutionalization and the sustainability of that enforcement. At the provincial level, when there are regional or provincial economic downturns we see a slowing of enforcement. This suggests that environmental sustainability is a luxury at the provincial level. So we need to make sure there is proper capacity at the local level for enforcement. We see an obvious need for increased resourcing at the national level but particularly at the provincial level for this kind of monitoring and enforcement.

Recommendation 8 is critically important in thinking about engaging the public. Understanding their rights, understanding the implications of a lack of enforcement, the implications of noncompliance, are important.

This report is good on green financing. It focuses on a national emissions trading system, but China could think a little more grandly about what it wants to do on emissions trading by playing a regional role. It could use the current discussions that are underway between environment ministers in China, Korea, and Japan to develop some kind of regional emissions trading system.

We have a global challenge regarding infrastructure and investment. The problem is partly financial but at the end of the day the problem is the lack of bankable projects, whether they be green or not. This is a significant challenge that we cannot forget. Once we have this project pipeline in place, then the demand or need that Andrew Steer described is there.

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Not only do we have not enough legislation for pollution treatment but the quality of this legislation is questionable. People drafting these laws are not experts and are not well informed about environmental protection issues. Also you see much conflict among different laws. All these advanced philosophies –

coordinated development, green development – are not well appreciated by the drafters of these laws. Also, MEP has been evolving from a low-status agency to its present status, so now there is a patchwork of about 20 environmental protection laws, many of them *ad hoc* and overlapping.

The new civil code will be important because it will be an overarching law. Awareness for environmental protection is based on personal property rights, so if the civil code could be “greenized” then we are at a good starting point to move in the direction of green and coordinated development.

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I would like to stress even further the importance of public involvement and civil society in the enforcement of the rule of law. Both the pressure and the support that civil society – particularly local civil society – can offer, is a powerful agent for change, both in terms of spreading awareness of the value of rule of law and in terms of confidence in the system. Public involvement creates an environment where bad corporate behavior and weak enforcement are socially unacceptable.

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Non-degradation of the environment should be part of the constitution, and so this should be an important recommendation from us. This principle should also be part of the civil code too, and part of the *Environmental Protection Law*. Until today it has all been about treatment and rehabilitation of the environment, but now we are talking about the prevention of pollution before it occurs. Obviously, non-degradation of the environment is a top priority, so this should not be a long-term task.

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Environmental laws are often perceived as a luxury. There is plenty of evidence in many national studies that strong environmental laws at the end of the day trigger strong green industries. Germany is one case where you can demonstrate this kind of causality.

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The enforcement of legislation is crucial, so we should establish an environmental protection court. Such a court could involve both the public and private sectors. We have good precedents already in China, for example, the ecological protection court in Guiyang.

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The passing of the EIA law results from compromises among different stakeholders. We used to focus on assessment at the project level, but that is not comprehensive enough. We also need to do planning assessment, policy assessment, and regional assessment. We also need accountability for the entity that conducts the assessment, that is, regulation of the regulators. Many such entities are just looking for profits. They are not really following up, and as a result many environmental issues are not being addressed.

We need to make sure that all these people are not compromising the public interest. Individuals and businesses should be held accountable, especially by economic means. This includes infringements by government officials who have been promoted because of their contribution to boosting local GDP.

Task Force on Eco-environmental Risk Management

Barbara Hendricks introduced the co-chairpersons of this task force. **George Greene** is Senior Associate at the International Institute for Sustainable Development and founder of Stratos Inc. **Bi Jun** is Dean and Professor at the School of the Environment at Nanjing University.

Bi Jun began by focusing on the current status and future prospects of environmental risk, and on gaps in current environmental risk management systems. Here are his main points:

At a certain stage of development we need to prioritize the most important risks we can address with the resources we have. To understand that, we must first categorize the environmental risks, such as the risk of a sudden accident, or a cumulative threshold event, or chronic consequences.

From 1993 to 2014 there was a decrease in the frequency of pollution events. At the same time, China's eastern regions were under greater environmental risks than western regions. As to longstanding chronic risk, this is certainly the case for soils. In most mining areas, there is also incidence of chronic diseases. In addition we have also identified some other risks generated by economic development, for example, water pollution, environmental risks due to climate change, new chemicals and emerging pollutants, ecological risks of regional development, and radiation sources and nuclear waste risk.

We need to understand the reaction of the public. Environmental complaints rates have increased with the rise of disposable income. At present, measures are taken only after an environmental event. So it's important for us to have preventive measures and also an effective community approach so the public can better understand environmental risk.

The Chinese government has been prioritizing prevention. In 2015, the Central Committee of the Communist Party of China and the State Council issued the *Integrated Reform Plan for Ecological Civilization*. Local governments then integrated this into their own plans. Despite all these efforts we admit there were some gaps, as demonstrated by the August 2015 explosion in Tianjin.

In the US, Europe, and parts of Asia, there are robust and efficient environmental risk management systems, with macro-level governance systems, specific goals and relatively complete environmental risk enabling measures such as financial security, economic instruments, industrial responsibility, and information disclosure. In addition, there is active participation by the general public.

China's environmental risk governance system is incomplete. Systematic environmental risk management goals and a national strategy and roadmap have not yet been developed. The set of enabling measures for environmental risk management is incomplete. We do not have enough tools to manage environmental risks. Finally, environmental information disclosure, environmental risk communication, and public engagement systems are weak.

Next, **George Greene** presented the major recommendations:

We have prepared a thorough set of recommendations for building a proactive environmental risk prevention and control system for China. It comprises four elements: environmental risk governance,

clear goals and strategy, enabling measures, and risk communication and engagement. Our overall purpose is to establish a solid and effective environmental risk decision making and implementation system to ensure environmental health and ecological security, with benefits to public health and to national security, and to maintaining ecosystem health.

Regarding the first element – *environmental risk governance* – we recommend the establishment of a high-level environmental national risk board. It would be science-based, and would have to be placed in the government of China at a sufficiently senior level that it can work across all ministries and at different levels. Its primary responsibilities would be to identify, assess, and prioritize current and potential environmental risks, resolve tradeoffs among multiple risks and between economic development goals and environmental risk control needs, and oversee and coordinate the development and implementation of an environmental risk management system in an integrated way in China.

We strongly recommend carrying out short-, medium-, and long-term environmental risk assessments for China's national macro-strategies, for example, new type urbanization and the OBOR initiative. This will enable the development of risk response strategies and a risk roadmap. We want to ensure that risk is built in so that these macro-strategies, as they move forward, will provide all the economic and social benefits while still protecting the environment.

More broadly, environmental risk needs to be built into government policies, for example, sector policies at the national level. Spatial planning is an important vehicle for integrating environmental risk. This will have to happen at the national level but ultimately at every level of government in China.

Our second element is *developing goals, strategy, and targets* for environmental risk management. A primary and early task of the national environmental risk management board will be to establish comprehensive environmental risk prevention and reduction targets. This has to incorporate not just risk assessment results from a scientific perspective, but it must also take account of public perceptions and concerns. And of course it must also address the weighting of costs and benefits. Once we have a national strategy under the authority of this board, then we need to take this down to the regional, provincial, and local levels.

We also recommend requiring provincial and regional governments to prepare risk roadmaps setting out a clear pace and path to meet their targets – but according to national socio-economic development circumstances and relevant to the different types of risks that occur across different parts of China. And the national risk board would ensure that consistent methods are used in the conduct of these lower level risk strategies.

We need to have a good picture of the risks in China now, so we need a national assessment undertaken by the national environmental risk board to provide the basis for risk goal setting and strategy setting, and particularly for establishing targets.

We have mapped this out. In the current FYP, environmental risk prevention and reduction can be incorporated into macro and other decision-making strategies. We also believe that certain risks such as PM_{2.5} can start to be managed and that risk levels can be reduced within a five-year period. During 2025 to 2030 we think that the whole environmental risk management system can be transformed to a proactive, preventative mode, and we see a chance to reduce and control certain risks such as eutrophication and heavy metals in soils and water. In the long term there will be a need to readjust the system, to evaluate what we have learned. We believe that by the period 2030 to 2040 it will be possible to have an overall controlled lower level of environmental risk throughout China, at the same time to bringing into line public perceptions of risk and actual risk.

Our third area of focus is *enabling measures*. We believe there is a need to strengthen or create new law, especially to deal with hazardous and dangerous chemicals. Plus we need a law on environmental liability and compensation. We urgently need a dangerous chemicals safety environmental risk law. This legislation would apply to all dangerous chemicals and will enhance and complete the regulatory system for priority pollutants in the production process in China. There is much good international experience to draw on, for example, Europe's REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) directive in Europe and other measures can provide a strong basis for better law on chemical safety in China.

For environmental emergencies we need to create stronger coordination mechanisms with clearer assignment of responsibilities and more open information sharing around environmental risks that might lead to accidents and to the response mechanism after accidents. There needs to be much stronger

coordination and assignment of clear responsibilities across the range of departments and government bodies that are responsible, such as agencies for public safety, public health, and environmental management.

While much emphasis falls on the roles of government and civil society, we must not forget the responsibility of industry and enterprise for environmental management, environmental protection, and risk reduction. Again there is a great deal of experience internationally, including voluntary initiatives. In the chemicals domain the Responsible Care system already operates in 50 countries where industry is voluntarily reducing environmental risk levels through better management practices. In China we already see an effort through the China Petroleum and Chemical Industry Federation to take on board Responsible Care but actually it is in a weak stage. We encourage urging industry to become more responsible and to take up the challenge through proper verification methods and engagement. A key recommendation is to enable and require all enterprises in China to put in place robust environmental health and safety management systems.

Environmental risk disclosure, particularly through the markets, listed companies, and under the China Securities Commission, is essential.

In terms of green finance as it relates to environmental risk management, we have three recommendations: to make liability insurance for enterprises mandatory, to create an environmental risk deposit system for high risk industries, and to put in place special funds for contaminated site remediation and environmental health compensation.

Environmental information is central. We believe that environmental risk information needs to be integrated into the new initiative that is underway for an environmental monitoring network in China.

Our final element of focus is *risk communication and engagement*. We recommend the development of a multi-dimensional, transparent environmental risk communication system. Involve multiple stakeholders: government ministries, enterprises, representatives of citizens and community groups and social organizations, as well as the media. If citizens are familiarized and if communities better understand the risks they will face in everyday life they will not only be more accepting but actually be able to contribute to better risk response. We recommend the development of robust communication and

public engagement models for dialogue and feedback between affected communities, all levels of government, and enterprise.

After the presentation by the task force leaders, **Barbara Hendricks** shared these reflections from Germany's experience:

It is important to define red lines for pollution of air, soil, water, and chemical substances, and it is necessary to strictly monitor that these limits are complied with. We must develop strategies, rules, and standards on how environmentally harmful or unhealthy substances should be handled. And we need to build institutions for risk management and disaster prevention to prevent accidents and to react quickly if accidents happen.

Comments on the Task Force presentation

Here are two examples of successful pre-emption in environmental policies:

Mitigation banking is both profitable and good for the environment. In the US, environmental legislation and regulatory systems allowed for mitigation banking which helped preserve species and areas, and also was profitable for the banks.

Instead of environmental courts, punishment, and police, Brazil involves the mass media – especially soap operas – as an instrument to convey environmental challenges. These TV shows address deforestation in the Amazon, water shortages in big cities, and beach pollution and resultant damage to the tourist trade. One way to get public awareness is to include these agendas in the public media.

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It is troubling to present the issue in terms of “as people get wealthier they have lower tolerance for bad things.” That is a dangerous way to present it, because it implies that poor uneducated mothers are somehow more tolerant of their children having cancer, which of course we do not mean. Probably there is another way of presenting the idea that that might be more helpful.

Your recommendations on the national environmental risk board are terrific. The task is to prioritize risks and resolve tradeoffs. It wasn't entirely clear how that would be done – by a cost-benefit analysis? In the US, the Environmental Protection Agency is obliged, for each new regulation, to demonstrate costs and benefits.

It is important to distinguish different situations. When “really bad things happen” it can be because the standards were not adhered to, or because laws were broken – because wickedness took place. Or those bad things can happen because standards were in fact adhered to – but the standards were wrong. It seems important to disentangle those issues because the way you deal with those outcomes are different, depending on the causes.

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When we talk about risk management, we talk about incidents that have not yet happened, and the possibility of their consequences. In China, however, a lot of this is not a forecast of the possibility of certain things happening in the future. Instead, it's usually directed to things that have already taken place, for example, PM_{2.5} and its health effects, or soil contamination. So I think our risk management efforts should be for things that have already occurred to prevent them worsening and mitigating the effects.

Item 9. Special Policy Study Reports

Special Policy Study on Soil Pollution Management

China's Vice Minister of Environmental Protection and CCICED Secretary General **Li Ganjie** chaired the presentation of the special policy studies, and introduced the group leaders. **Wang Shuyi** is Professor at the Law School of Wuhan University and at the Shanghai University of Finance and Economics. **Wit Siemieniuk** is Vice President, International, and Principal Technical Specialist with AMEC Foster Wheeler International.

Wang Shuyi began the presentation by reporting on the current status of soil pollution management in China and the need for legal regulation.

An April 2014 investigation found that 16.1% of surveyed land exceeded general pollution limits, the main pollution sources being inorganic pollutants, primarily heavy metals (which make up 82.8% of pollutants). As well, 19.4% of arable land failed to attain soil environment quality standards. The pollution in the southern part of China is worse than in the north. Another large survey, in June 2015, found that 8% of investigated arable land has been contaminated. And a third investigation, in 2014, after looking at the soil's ability to sustain food production and food safety, discovered that 60% of soil could be classed as clean, 29.5% as less clean, and 2.6% as polluted.

So three surveys led to the following conclusions: soil pollution in China is increasingly serious, the general condition of China's soil environment is poor, and human activity is the main cause of soil pollution, which is primarily heavy metals contamination.

Regarding the current status of soil governance and management, a major milestone in Chinese soil pollution management happened in 2005 with a decision to implement the scientific outlook and strengthen environment protection. Here are some of the highlights of this decision:

- Soil pollution prevention is a focal point for strengthening environmental protection in rural areas.
- We must undertake a national soil pollution survey and comprehensive management of contaminated arable soil.

- Severely contaminated soil that requires complicated remediation should be regulated by law.

Following this decision, a number of measures were taken. A nationwide soil survey was initiated in December 2005 jointly by MEP and the Ministry of Land and Resources. The circular *Opinion on Strengthening Soil Pollution Prevention* was released by MEP in June 2008. The 12th FYP on National Environment Protection stated that soil environment protection should be strengthened. In January 2013 the State Council issued the *Notice on Recent Work Arrangement of Soil Environment Protection and Comprehensive Management*. And since 2013 MEP has been working on the development of an *Action Plan on Soil Pollution Prevention*.

Although the government has taken the measures we mentioned above, in fact China lacks acts and regulations on soil pollution management. It looks like we have a lot of legislation, but actually on the ground we lack basic regulations. Also China lacks an improved soil environment standard system, soil management institutions (resulting in weak capacity for surveillance on the soil environment), and financial guarantees for soil remediation.

China need a system of acts and regulations on soil pollution management, an improved soil environment regime, a framework on soil pollution management, a scientific system for soil environment standards, and a financial guarantee for soil remediation which potentially requires large and stable funds.

Here are our six recommendations:

Recommendation 1: confer on soil protection fundamental national policy status. Soil of course is the growing medium for food. It is an irreplaceable but limited natural resource, and the source of life on earth. But nearly 10% of arable land in China has been polluted. The functions of food production and the provision of ecological services by soil are continually decreasing. So, the protection of soil will ensure China's capacity for sustainable and social development.

Recommendation 2: identify an effective management framework for soil pollution management. We need to put in place a comprehensive soil environment protection law, an overarching basic law. We have two priorities: to ensure safe soils for agriculture, and to manage the risks from contaminated sites. We must

differentiate our measures in terms of solving immediate problems, dealing with the past (such as legacy issues), and protecting the future by preventing further pollution.

Recommendation 3: develop a comprehensive Soil Environment Protection Act. We need to change our traditional idea of legislation. Environmental protection is more than the treatment of pollution. Soil protection is a fundamental issue rather than a temporary phenomenon. China's *Soil Environment Protection Act* must reflect China's soil reality and the targets of soil legislation. After all, most of China's soil remains clean, so we need to focus our protection endeavours on that part of the land, so it will not become polluted. Also, the legislation must fit with the country's capacity to solve soil pollution problems. Soil will be a lot more expensive to treat after it is polluted, so we should focus more on prevention than on remediation. The prevention of soil pollution should mainly be achieved by revising and improving other relevant environmental laws, such as those related to water and air. China's *Soil Environment Protection Act* should be more comprehensive because it needs to address pollution and improving soil quality, as well as risk management arising from remediation.

Recommendation 4: establish a scientific and integrated soil environment standard system. Standards are the very foundation for the enforcement of laws. We have to put in place a scientific and integrated soil environment standard system. We do have a system already, but it is fragmented. Also we have national, regional, and local standards. We should focus on limited targets for improvement instead of going all out. Also the soil standards should be reflected in the new laws.

Recommendation 5: establish a fair and effective liability and financial mechanism to resolve legacy contamination. Legacy contaminated sites are places where the person or entity responsible for the contamination cannot be found. Therefore money cannot be found to address the issue. It's a common problem faced by many other countries. We have to put in place a clear liability system to find out who is responsible, and we need to create a fund dedicated to remediation.

Recommendation 6: establish an enabling mechanism which includes incentives and a series of measures for soil pollution management, to activate stakeholder participation. The traditional command-and-control model should be abandoned. Regarding government incentives, redevelopment plans for contaminated sites could be an important part of the national planning system and could use a four-step process of "plan, study, remediate, and develop." Governments could ensure that "who invests in remediation, benefits"

and “who remediates the land has the privilege to redevelop.” And governments could set up a soil bank. In the case of economic incentives, the value of soil should be integrated into the Natural Resource Accounting System, and organic agriculture should be encouraged through subsidies and technical assistance. Incentives for encouraging public participation include access to and distribution of all relevant information, and open channels for complaints and reports from the public on soil pollution incidents.

At this point, co-chairperson **Wit Siemieniuk** added two observations and a recommendation:

2015 is the international year for soil. Soil legislation in other countries has been put together in a piecemeal approach and is often a modification of existing legislation. Most countries do not have a “clean soil act” as such. This has contributed to inter-ministerial competition rather than cooperation. This is important because China now has a blank slate. Our study group focused only on certain topics, but there are other areas that need to be studied: better protection for agricultural soils, protecting and enhancing stores of soil carbon, building the resistance of soils to climate change, and soil protection during construction and development. We recognize that having soil under one umbrella is more efficient than having it under many. Otherwise, you will have agriculture fighting environment fighting forestry because each party thinks that its legislation is the one that must apply.

There are soil quality standards in the EU, US, and Canada. Adopting these standards in law in China will immediately change the value of each piece of property that has some kind of contamination. It will also change what that land can be used for in future. These consequences have economic, social, and environmental impacts, so we need to be careful with this as standards are adopted.

CCICED could act as a catalyst to bring all the parties together for a China soil summit. It’s not just scientists setting standards, or bureaucrats setting legislation. There are also bankers, insurance companies, developers, and they all need input into the process. There is the general public and NGOs that have knowledge to contribute to the crafting of the law. Currently, China aims to set the legal basis for soil management by 2017. Potentially the Council could be the catalyst to bring all the parties together, to contribute, inform, and engage with regulators and stakeholders to get the new *Soil Environment Protection Law* where it could become the template for many other countries.

Comments on the Special Policy Study presentation

China needs a national strategy for the sustainable use of soil. A certificate of soil quality conveys value and enables stakeholders to take responsibility for the quality of the soil.

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When we started drafting China's *Environmental Protection Law*, many senior leaders thought it was just a formality. They didn't take it seriously. After the 3rd Plenum of the 18th Party Congress, however, the mentality changed. In 2014 new ideas and paradigms emerged and a lot of laws are being formulated. People are determined to protect the environment. This is why it is important for us to upgrade the soil law. There is still a lot of soil that has not been contaminated yet, so it's important for us to take measures and pass legislation that will protect this precious uncontaminated soil.

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The proposed soil summit should include more than academics and bureaucrats and scientists. It should also include the users of the land, the big food and beverage companies, as well as the small land holders such as subsistence plantations. You can develop a series of payments for environmental services that will address the small dwellers' properties, and you can also get the big food and beverage companies to pay for redress of soils. The corporate money is interested in this kind of thing, so long as there are long-term contracts behind it.

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We are waging three important battles to protect water, soil, and air. Although we have made many efforts, we are very much behind in our schedule to protect the quality of the soil. It is essential to incorporate the concept of environmental governance in the protection of soil. The central government has been advertising the concept of the modernization of environmental governance. The central government has made clear what we will do in the 13th, 14th, and 15th FYPs. There are many important

questions we must answer to set targets in these three periods. If we can have some more in-depth research in this area we can have a clearly marked roadmap for the future.

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Seems the reasons for soil pollution have not been clarified. How is it that soil pollution has evolved to where it is today? Also, we need to focus more on the development and application of relevant technologies.

Special Policy Study on Coordinated Actions for Addressing Climate Change and Air Pollution

Li Ganjie introduced the three co-chairpersons of this study group. **Lars-Erik Liljelund** is a CCICED member and former Director General of the Swedish Environmental Protection Agency. **Michael Walsh** is founding Chairman of the International Council on Clean Transportation. **Hao Jiming** is a Council member and Professor in the School of Environment at Tsinghua University, Beijing.

Lars-Erik Liljelund began by explaining the study group's focus on SLCP and non-road mobile sources (NRMS). He then made these points:

SLCP includes black carbon, methane, ozone in the troposphere, and some HFCs. Of particular interest is the fact that strategies to reduce black carbon and methane will reduce both air pollution and near-term warming. Regarding SLCP, there has been much discussion about reducing the rate of global warming. It's effective if you can reduce the concentrations of SLCP in the atmosphere. But in this report we also put a lot of focus on the quality of life for the Chinese citizen. Our study is also about crop yields, and the impact especially from the tropospheric ozone. The initial approach behind this has been addressing climate change, especially in the near term. There are many linkages between SLCP reduction strategies and action to prevent emissions from NRMS, an area neglected by current policy. Coordinated actions in this report address air pollution and climate change, with a focus on SLCP and NRMS.

One important rationale for this study is that China faces opportunity and challenges for accelerating coordinated actions for addressing both air pollution and climate change. Also next year a new *Air*

Pollution Prevention and Control Law will come into force that will open opportunities to address SLCP and NRMS. This law explicitly links air pollution and climate change, and covers emissions from industry, traffic, agriculture, and so on.

Internationally, the most influential report has been the 2011 study led by UNEP and the World Meteorological Organization, in which scientists identified the impacts of SLCP on climate change, air quality, human health, crop production, and ecosystems. It concluded with 16 cost-effective mitigation measures. We are happy because several of the scientists and experts who participated in the UNEP process were also involved in our study group.

In China, holistic research on SLCP has not taken place. Considering air pollutants, research has progressed with regard to emissions, source apportionment, impact, abatement technologies, and management practices. Further research findings about emissions and source apportionment will be needed to support some of the decisions on integrated control and to focus action in the most cost-effective manner.

In recent years, other international initiatives to reduce SLCP emissions have emerged. In February 2012 the Climate and Clean Air Coalition to reduce Short-Lived Climate Pollutants was launched as the first global effort to address SLCP. The US, EU, Canada, Mexico, and other countries also began reducing SLCP in their own country. This network is growing and there are regular meetings with valuable exchange of experience and knowledge.

The Chinese government has released many laws, regulations, and policies on air pollution prevention and GHG mitigation, for example, the new *Air Pollution Prevention and Control Law*. These actions greatly reduce air pollution and achieve co-benefits in the reduction of SLCP emissions. But we have found that China has no dedicated policy to reduce SLCP emissions.

In China, black carbon comes mainly from coal combustion, biomass burning in stoves, vehicles, and particularly heating and cooking activities in rural areas. It is estimated that China's black carbon emitted each year from 2000 to 2008 was 0.96 to 1.81 million tons. Black carbon particles remain in the atmosphere only a few days to a week, but they create problems when black dust accumulates on glaciers and accelerates melting. The residential sector presents a high black carbon emission factor and is

responsible for 40% to 85% of the estimated black carbon emissions (but the uncertainty of the emissions inventory of black carbon is generally above 100%).

Tropospheric ozone has an impact on health but also on crop production. There has been a huge increase in both nitrogen oxide and volatile organic compounds since 2005. In China nitrogen oxide has increased nearly 35% and volatile organic compounds about 20% in the same period. Also, the compounds that create tropospheric ozone remain in the atmosphere for a long time, from weeks to years.

Methane is also long lasting. In 2005, emissions were 930 million metric tons of CO₂ equivalent. One of the methane emission sources during coal production comes from the “coal mine methane” drainage process, with great mitigation potentials.

Some of the HFCs behind the ozone problems include three different types. You find them in air conditioning systems, including in automobiles. They have high potential to create tropospheric ozone.

Now we will look at control technologies and the potential for emissions reduction and improvements in air quality. In the case of black carbon, we have to focus on the reduction of energy consumption and fossil/biomass energy efficiency increment. It is important to understand that the problem does not come only from fossil fuels, but also from renewable fuels like biomass.

Methane emissions reduction technologies in fuel production are ready for the market.

The most dangerous HFCs have been controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer, but other types of HFCs are the precursor for creating tropospheric ozone. There are different technologies for the destruction of these HFCs.

Because these pollutants come from different sources, we need inter-agency coordination mechanisms. Regulatory and supporting departments can be identified by the source pollutant. For example, to address black carbon, a coordination group of energy, environment, agriculture, transportation, and construction departments should be identified, and together they should aim to reduce the use of coal, biomass open burning, and diesel emissions. To reduce methane emissions in fuel extraction, storage, transmission, and waste disposal, a working group to coordinate coal, petrochemical, municipal, and

environmental departments is needed. HFCs should be aggressively controlled under the current joint compliance mechanism with increased efforts to reduce HFCs in industrial and commercial air conditioning and refrigeration.

Michael Walsh continued the presentation and talked about the current status of NRMS, international experience in dealing with these emissions, and coordination among government agencies. Here are the main points of his talk:

The international experience has been to work first on the on-road sector. Then, as regulations, controls, and technologies evolve, the experience then is to phase in controls for the non-road sector, where many of the same technologies are viable. In China the on-road sector has undergone a reasonable degree of control. Meanwhile we can see that the non-road sector is already quite immense. China has eight of the 10 largest ports in the world. It has a massive shipping sector. The production of new construction equipment has grown more than ten-fold since the year 2000. And we can imagine the magnitude of China's agriculture sector and the equipment that is used there.

In Europe and the US we are in our fourth generation of controls on the non-road sector. China meanwhile is still working on controls for the on-road sector and in fact has introduced so-called China IV, which is roughly equivalent to Europe IV Emission Standards for on-road diesels. But China has only modest controls for the non-road sector, and then only for certain parts of that sector. For example, for China's immense river marine sector, there are no regulations on vessels at the present time (though they are under development).

If we look at the emissions inventory we find we have limited data. We know that China's construction machinery emissions are higher than they are in the international arena, partly because of maintenance practices and fuel quality, and the high volume of China's production itself. The data do indicate that, if we combine all the mobile sources together, already the non-road sector is responsible for about 40% of the nitrogen oxide emissions. Regarding particulate, the fraction from the non-road sector could be as high as 60%. From a health standpoint that is severe, but it is severe also from the standpoint of climate change, since about 70% of the typical particle from a diesel vehicle is black carbon. You can see that the contribution to black carbon is immense. In all of these cases, the potential for mitigation is high.

If we look at the marine shipping sector, in Shanghai the mobile sources are about 30% of the direct PM_{2.5} emissions. The shipping sector is 5% to 8% of that. In Shenzhen, the fraction from the marine shipping sector is 13%. These are significant figures and they are growing rapidly.

What useful lessons can we share with China from the international experience? The non-road sector is growing fast in China, especially some of the ozone precursors and black carbon. The technologies developed for the on-road sector are available and in some countries are already being applied to the non-road sector, and could be applied also in China. Cleaner low sulfur fuels are a key element.

The good news is that the recent amendments to the clean air law in China have laid out a roadmap for reducing the sulfur content of the non-road fuel and even some of the marine fuel. Tools to help ensure in-use compliance have improved, especially in Europe – although the recent Volkswagen experience has given us pause that we have solved all these problems with compliance. There is much more we can do in both the US and Europe to address in-use emissions. Retrofit technologies that have been used for years in the on-road sector can be used in the non-road sector, and places like Switzerland have demonstrated them well.

We need to do a better job of communicating to the public the importance of the shipping sector from an environmental standpoint. There is not much public awareness, but that can be improved. And we can clarify that there are a lot of mitigation measures that could be applied here in China. Because there is competition among China's ports, it is worthwhile to approach "emission control areas" where all ports are treated equally. For instance, in southern China you could deal with Hong Kong, Shenzhen, and Guangzhou as one area with controls being applied equally to the three cities. Robust enforcement is critical to any strategy. Otherwise we are wasting time. Pollution from domestic, river-borne vessels needs to be controlled in parallel with efforts to deal with ocean-going vessels.

Other technologies are useful, for example, shore power at berths. Emissions happen when ships dock and run their auxiliary equipment to load or unload. Shore power can reduce those emissions. Another measure is alternative fuels, such as liquefied natural gas, available in the port area. Yet another is speed control as ocean going vessels approach port. If they slow, they can reduce emissions significantly near land. And of course typical exhaust gas or tailpipe treatments are also available.

Inter-agency coordination is critical. We are pleased that the Ministry of Transportation and MEP are coordinating on how to deal with ship emissions and have put out preliminary proposals for emission control areas and tightening of standards for new vessels. But there needs to be quite a bit more of that, for the non-road sector in the aggregate.

Finally, **Hao Jiming** concluded the presentation and focused on the study group's conclusions and recommendations:

In recent years, although more management and research resources have been delivered to air pollution prevention and control, air pollution has only worsened. We have combined the two forms of emissions, SLCP and NRMS, because this approach conforms to the Chinese situation well, and also it provides a good entry point into the control of pollution and its sources.

Our study group arrived at five conclusions:

- Current policies regarding air pollution prevention and control have not adequately taken SLCP and NRMS emissions into account.
- The management systems for SLCP and NRMS are insufficient to ensure effective control of SLCPs from the non-road sector. The new *Air Pollution Prevention and Control Law* offers an opportunity to improve such systems. NRMS include agriculture and construction machinery, and new regulations have been set up to control these emissions.
- Emission standards and policies for SLCP and NRMS emissions lag behind international best practices. Again, the new *Air Pollution Prevention and Control Law* presents an opportunity to improve the regulations.
- Some of the advanced technologies to control SLCP and NRMS emissions are available and in use around the world. International experience offers opportunities to rapidly enhance their application in China.
- Further research and more comprehensive monitoring data will improve the ability to target action on SLCP and NRMS.

We offer four recommendations:

Recommendation 1: we need to introduce sound emission regulations, standards, and policies, including SLCP standards and caps based on the best available technology. We should establish regulations for NRMS accelerated with the goal of achieving international best practice norms during the 13th FYP.

Recommendation 2: we must build a management system that reduces SLCP and NRMS emissions. We should identify carefully the regulatory bodies and their responsibilities. An NRMS environmental management mechanism should clarify the responsibilities of state and local departments.

Recommendation 3: we should launch a National Clean Diesel Engine Campaign, based on best practices internationally, and implement this during the 13th FYP. This campaign should be headed by the State Council and participants should include MEP and the Ministry of Transportation. The focus should be on road diesel cars, construction machinery, and agricultural machinery. In addition, we need to improve the quality of the diesel fuel.

Recommendation 4: we must strengthen technological innovation and application and international cooperation in emissions reduction. In terms of NRMS and SLCP, the investment has been insufficient. We need to put in place a consolidated data accounting system, big data monitoring, and a shared mechanism on information disclosure. We also need to use the mechanism of multilateral collaboration on SLCP governance, including the Climate and Clean Air Coalition and other bodies.

Comments on the Special Policy Study presentation

The report fills a void and is an important contribution to the efforts by China to address air pollution problems in this country. In terms of PM_{2.5} we just heard the benefits China would experience right away in investing in the fight against SLCP. Also it would have an immediate impact on arctic regions that suffer from rapid global warming caused in large part by such pollutants. This is an important contribution and represents a “low hanging fruit” in the fight against air pollution.

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In this session we are talking about non-road sources, but given our focus on governance and rule of law, it's worth saying a word about Volkswagen. Although it concerns mobile sources on-road, we saw how very rigorous standards in the US and Europe can be undermined by limitations on implementation. In fact it's pretty surprising how weak are the implementation of auto standards. It is important to note that this Volkswagen issue was actually brought to public attention by the work of an NGO, the International Council on Clean Transportation, founded by Michael Walsh.

The Volkswagen case is a real-time example of a challenge to the rule of law. How will governments deal with what was systematic cheating on a large scale? For all the issues we are talking about at this meeting, especially governance and the rule of law, it is worth noting there is a live case before us that has lots of lessons for what happens here in China, as well as in other countries.

Item 10. Policy Recommendations: Comments II

Chair **Achim Steiner** again offered CCICED members the opportunity to comment on the draft recommendations as they are being developed during the conference.

First, Chief Advisors **Shen Guofang** and **Arthur Hanson** provided a brief review of the revision process and appealed for more feedback from members. In particular they highlighted two unresolved issues: that the current draft was too long, and that some of the Council's recommendations had already been addressed by the recent 5th Plenum.

Achim Steiner then proposed these general guidelines for the discussion:

Things move faster than we expect. Some of our recommendations have just been adopted by the plenum. The recommendations will need to reflect that because no state leader wants to read a recommendation that has already been realized.

Now that we have heard the narrative of the new 13th FYP, our challenge this year is to make our recommendations more systemic, more internally coherent. They must provide the Chinese leadership with the ability to think forward in terms of these recommendations, rather than in terms of framing basic policy-making steps. The minister has said that "the body of the recommendations is excellent. What we need now is a synthesis at the highest level of strategic direction setting." We are working towards a letter to the premier that would contain top-level messages. What would be two or three key directional or strategic messages that the Council could draw from its work and from understanding what is happening in China now, with a view to 2016?

Following those remarks from **Achim Steiner**, various Council members offered these thoughts:

As the draft stands now, we need to consider several important things. We need to be able to tell the difference between the management system and the national laws and regulations. On page 15 and page 18 of the Chinese language version there are conflicting concepts. Legislation is the responsibility of the National People's Congress. The job of other government agencies is to implement this legislation.

There is a difference between the high-level committee and the national committee. Page 17 mentions that a high-level committee should be set up. I think it is at a higher level than the government, so I don't think that is appropriate.

Stakeholders should have a consultation and dialogue mechanism so that they can honor their corporate social responsibilities, and NGOs should be greatly encouraged. Yesterday Minister Chen mentioned the importance of public participation, and today a lot of reporters talked about this. It seems however that public participation has not been emphasized enough in the draft recommendations.

Transformation is essential, but it's more important for us to have the right goal which should be governed by laws and regulations. Transformation is a kind of temporary process while laws and regulations are more long-lasting. Therefore I think we should focus on green development and governance capacity rather than on green transformation.

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The policy recommendations this year are of crucial importance to the Chinese government, because this is the last year of the drafting of the 13th FYP. If our suggestions can have some influence on the FYP to promote the protection of the environment, this will demonstrate the important role of CCICED.

To be more specific, there are two levels of environmental governance. The first is the functionality of MEP, the content of work that MEP does. But many environmental issues cannot be addressed solely by MEP. Instead, they are linked to the development of China as a whole. So we should emphasize the significance of governance capacity as a whole rather than just environmental governance capacity.

We should recommend that during the 13th FYP the government should produce legally binding indicators governing the improvement of the environment. In the 13th FYP we can focus more on the improved quality of the environment, for instance, the improvement in air quality or of certain river systems. Only then can we become more influential and only then can the public see the improvement of the environment.

Concerning the functionality of MEP, presently there is a paradox. No government department wants to be too demanding of itself. If MEP has all the environmental responsibilities on its shoulders, it could not function. Therefore in our recommendations we should realize that responsibility for protecting the environment should be shouldered by governments at different levels – especially those agencies responsible for economic activities. Every city, every province should have its own precise and concrete environmental targets.

Given the soil situation in China, we must again emphasize that the continuing occupation and usage of land should be stopped. We need to raise the “efficacy” of land, because we can already fulfill our needs for economic development. In other words, we don’t need to set up new industrial areas or take over more land in order to develop the economy. To protect our resources, we just need to improve the efficacy of present land use.

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Our three main priorities should be:

- governance, which means evidence-based decision making, public participation, NGO involvement, implementation, and enforcement;
- innovation, including the role of green technology, research and development to improve support capacity, the industrialization of green growth, and a green low-carbon development innovation plan;
- new financing instruments to ensure the green transformation.

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We can summarize our priorities in three words:

- *Integration.* We mean integration across sectors and ministries, but also across levels of the governance system, from cities to provinces to the national level.
- *Implementation.* China already has strong policies, but now the issue is implementing them.
- *Participation.* We should stress further public participation, particularly local civil society and communities that are on the receiving end of some of the problems posed by environmental degradation.

In addition we should emphasize ecosystems and biodiversity – particularly biodiversity which is the engine of the ecosystem and allows the ecosystem to function productively and generate the services that we all enjoy.

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To clarify comments made yesterday about advice not to create a green bank: one certainly does need a coordinating agency to connect supply and demand on green financing. It's just that "green bank" is a troublesome term. That coordinating agency is absolutely essential to launch the process. It's a reference point, something government has to set up to enable green boutiques and green platforms to operate.

Looking at China from outside, one sees a growing momentum in its environmental image. Once upon a time, China had a reputation for being a dirty country in terms of production, carbon emissions, and so forth. This has changed during the past few years, because of the leadership of President Xi and his alignment with President Obama – leaders of the two biggest pollution emitters on the planet. Next year's G20 meeting should not be limited to financial issues. It should also involve ecological civilization. It is a moment to continue the momentum that has built, an opportunity that should not be lost. China is taking a courageous, leading position in the world with its green agenda and with ecological civilization. The G20 should bring back public attention to the green agenda.

Finally: the term "greenization" sounds awful. It will scare people away. A better term is "greening."

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Regarding the term "greenization," the importance in China is symbolism. China is a complex country and it is difficult to take big ideas forward in a way that is easily communicated. Greenization refers to the process of broad reform across many sectors, so they are looking for something that is sharp. It is not a word in any dictionary, but it will be. It is a means of saying that it is a set of processes of reform toward ecological civilization.

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Beyond the Council reports and documents a story is emerging. Yesterday the leaders described an ambitious transformation agenda. They talked about ambitious targets such as a low-carbon, circular economy; resource efficiency; decoupling wealth from resource use and pressure on ecosystems; and quality of life. We only started to discuss ecological civilization three or four years ago, but now we are already moving into the operationalization of ecological civilization.

Today China is confronted by challenges similar to those of most other countries: green development, sustainability, ecological civilization. This implies the need for joint learning processes or knowledge diffusion, and for China to lead internationally – such as at the G20 meeting. After China 2016 it will be Germany and then India hosting the G20, therefore making this environmental agenda part of the G20 discussions could be important.

We are in a period of transition from environmental policies to sustainability initiatives, from isolated sectoral transformation to systemic greening approaches across all ministries. This is different from reflecting only on narrow-minded environmental reforms. The whole debate on governance reforms and rule of law is about creating new and coherent systems. As a result of the success of the many recent environmental initiatives, there is a parallelism of standards and laws and rules that needs to be brought together in a systemic approach.

Knowledge is crucial. We should mention that a strategic assessment of what specific kinds of knowledge are needed in different arenas is vital, especially when seen against the background where investment in education in China is growing rapidly. But, is this money being invested in knowledge creation compatible with the ecological civilization concept?

Finally, our recommendations should stress the role of civil society and bottom-up governance to complement the top-down strategies and initiatives.

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The 13th FYP is the first time within this document that global eco-security has been mentioned. Clearly the core target of the plan is improving environmental quality overall, and this will fall on many

economic targets. In the 12th FYP there were 24 targets, of which one-third were green. But in the 13th FYP there are 29 targets, almost half of which now involve green. I would like to hear what our international experts say: what do you think of these environmental targets laid out in the FYP? How to include specific targets for environmental quality? The FYP is in the process of being refined and the suggestions should be more specific than the general comments about improving the environment that we have now.

China can do a lot here. China is a large developing country. We have the willingness and commitment to help other developing countries, both island and inland states. President Xi has made open commitments and we hope that we will hear from the international experts. What can and should China do on this whole issue of eco-security in the next five years?

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One is struck by how sophisticated are the challenges China is facing and how sophisticated is the Chinese understanding of these issues. In the Council's recommendations we do not yet have an equally sophisticated statement. Part of the issue is that when one summarizes something it often comes across as simplistic. We should have fewer recommendations in this summary, but give just a little more detail along the lines that a senior policy-maker would need. In our section on green finance, for example, I suggest using only two or three of the recommendations. So too on the G20. The decision has already been made that green finance will be on the G20, but we have some clear ideas about what the G20 could deliver, so we should say that. A third element might be the need for a body to oversee the transition of the financial sector in the next 15 years. So, more detail on the "how" but a fewer number of issues.

China is the first major country that understands that if we are going to make the needed environmental progress we must make fundamental structural changes. As the Vice Premier says, we need a global ecological civilization. So we need more on that in the recommendations.

If it is true that 48% of the economic targets are environmental, who is responsible for being the steward of China's environment? MEP is obviously responsible for all the items under MEP's brief, but it is also true that MEP is engaged in influencing everything from the shape of urbanization to agricultural policy, and so on. This sort of integration across government departments is essential.

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We do need to focus on a limited number of things. We should remember Bill Clinton's remark: it's the economy, stupid. It is that link between the economy and the environment that will be critical. There is no point in having environmental goals if you are not getting the economic structural change that goes with it. The key to that is innovation. In the case of financing, again the emphasis should be on coordination rather than on new institutions. We don't need a new clean development fund. And we need public participation and good governance.

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Our policy recommendations look scattered but many have similar or shared themes, for example, green finance or green transformation. We should consolidate all these proposals on green finance, banks, bonds, funds, insurance, and so on, into one green finance pilot project, so that the leaders and senior decision makers can better focus on our proposals.

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We should listen to that call for a focus on overall governance capacity and we should be thinking about messages to a wider range of audiences than environmental administrators, and a wider array of targets and indicators than environmental ones.

All of us live in a jungle of labels: circular economy, sustainable development, green growth, green development, green economy, ecological civilization. All these labels have been invented by people to get around the uneasy sense that there is conflict between the environment and economy, and that we can stitch this conflict together with nice words. In truth, there is inter-agency conflict in every country on these issues. One of the ways we as humans get around conflicts is to generate words that can accommodate them. The words can be a bridge for dialogue, but they don't actually solve the problem.

In the same way that we use words to link these areas of environment and economy, we need to use indicators to link them. Environmental outcomes should always be linked with economic outcomes. We should use indicators that don't allow one side to ignore the other side. Environmental indicators that

link with economic output – with productivity growth – keep forcing us back to putting the two side by side. That means we have to speak through indicators, but also through recommendations, to key agencies responsible for economic outcomes, for resource exploitation, and for consumer behavior. MEP needs the active engagement of other agencies, and this Council’s recommendations should try to help them with that.

It is fortunate that China is hosting the G20 right after both the Paris conference on climate change and the Agenda for Sustainable Development. But, as somebody has said, that agenda is well cooked, and little can be added to it. Therefore the G20 won’t be easy for China. China’s leadership can be powerful, but groups like the G20 march at the pace of the most cautious member. China’s initiative to get green finance on the agenda is important and so our task force on that topic feeds in beautifully. But China’s leadership, through China’s understanding of the issues at stake here, is more important than that of the G20. It is what China actually does and how CCICED can help China that really matters.

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We all agree that the recommendations are good, but we face a challenge with the structure of this document. These recommendations are being organized and arranged on the basis of our research results, which is good. But is there another, better way to organize them more clearly? Here are two alternative framework suggestions:

In the *parallel model*, the 13th FYP should be a focus. What can we propose to the FYP? That means the first part of the document should be refined targets and so forth. The second part should be capacity or capabilities. So it would be a parallel structure.

In the *cumulative model* we would divide the recommendations into three sections. The first section would address the main problems and challenges we face, such as coal emissions. The second part would present targets and objectives – and this of course is directed at the 13th FYP. And the third section would offer solutions to these problems, such as proposals for governance and legislation. Of course behind all this should be the general framework for our suggestions.

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Progress on the environment in China for many years has been hindered by a lack of data. Now, however, we could be on the threshold of a new era where China has much better information in real time than is currently available. If that opportunity can be seized, it makes a huge difference for government enforcement, but also for the ability of the public to engage in the process in a way many of us have applauded. It will also create a broader culture of compliance, which is essential for effective governance.

Whatever may happen at the G20, clearly China has positioned itself as a leader on this issue of global eco-security. In the context of its commitment to South-South collaboration, China will play a pivotal role in the world's ability to create an ecological civilization. So far, much of that discussion has been in the context of development assistance, but just as important is China's trade and investment with the rest of the world. If global eco-security is an issue this council can highlight in its recommendations, it may bring dividends over the years ahead.

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The recommendations should be shorter. For instance, whatever has already been included in the 13th FYP should not be repeated in our recommendations. As well, we do not need so many explanations of our proposals – we don't have to explain all the reasons. And, on page 14 of the Chinese language version, we need something more specific about the rule of law and about the new models for legislation and enforcement.

At present we are drafting the civil code. We should pay more attention to this in order to prevent the possibility of clauses that are not beneficial to the protection of the environment.

On page 15 of our draft recommendations there are inaccurate expressions. In one place we have environmental liability law and in the other place we have environmental liability and compensation law. On page 16 it is mainly about ecological liability and on page 18 the ecological liability law again. These should be reconciled.

At the conclusion of the discussion, chairperson **Achim Steiner** made suggestions for the structure and presentation of CCICED's policy recommendations to the Chinese government. His main points:

Nobody would like to abandon the recommendations we have worked so hard to formulate, but everybody agrees they are not the right vehicle to communicate with the Chinese leadership. Perhaps we need an edit of the recommendations as a body of work, on top of which would sit an executive summary. That summary would present the narrative not in terms of the task force reports but in terms of the themes that have been highlighted.

As well, perhaps the cover letter could be far shorter. We do not need to repeat a lot of the rationale and empirical evidence, but instead we should give pointers to the leadership toward our main emphasis. Then their experts could go back and into the task force reports as they wish.

There is no question that green transformation and the 13th FYP are the defining reference points for the policy agenda right now. Sometimes this is captured in terms of "we have to understand that many of the solutions to environmental problems lie outside MEP and in the wider economy." That gives rise to a systemic agenda, to questions about the governance model, and also to the evolution of a future focus for the MEP which must evolve with that agenda.

What is the Council pointing to as issues that need particular attention? We have fairly universal acknowledgement that the financing narrative is perhaps the newest in terms of adding to the Council's ability to speak about environment, informing decisions that traditionally would lie outside an environmental portfolio, in this case the whole financial system.

Governance runs through all these themes, but many of you spoke about the importance of participation and understanding in more than a rhetorical sense, whether it is through the public or business or the local level. Some of you, including the minister, spoke about big data and information. Throughout the task forces there is a constant question about performance measurement and accountability. A few of you said: please don't think of green transformation only in terms of technology and low carbon, but remember also there are biodiversity, ecosystems, and life in flora and fauna and all of it is part of the green transformation.

Then we had the repeated reminders that the G20 is a unique moment, whether through the green finance window, or whether through sowing the seeds of a discussion about ecological civilization, or through the global eco-security aspect. There is a sense that this Council does regard the G20 as an important moment for China to add to the global conversation.

Item 11. Phase VI of CCICED

Noting that 2016 is the last session of the current CCICED Phase V, Chairperson **Achim Steiner** made this appeal:

It is an opportune moment to seek impressions, guidance, and suggestions about the process of planning the Council in its sixth phase. The Vice Premier has signalled that Phase VI is a given – but it is a given in the sense of an evolved Council, with an evolved agenda and perhaps also other elements. Please offer suggestions on how CCICED in Phase VI could retain its high quality, its national and international expertise and convening capacity, and its relevance to top-level agenda setting.

Achim Steiner then introduced **Barbara Hendricks**, who made these main points:

My suggestion would make a link with the 2030 Agenda for Sustainable Development that we adopted at the UN summit in September. This decision has historic dimensions and we can only live up to that if all countries implement effectively the overarching goal, which is to adopt a lifestyle worldwide whereby every citizen on earth could live without destroying the finite resources of our planet. Of course, we in the wealthier countries are far from living such a lifestyle. In China, individual consumption, especially against the positive background of a growing middle class, will be a challenge for the environment, for the economy, and for society as a whole.

So it is important to establish consumption and production patterns early on that will support sustainable development. This is not a debate about renunciation, about doing without things. It is about energy efficiency and resource efficiency, and ultimately also about health. All this can have positive economic effects, both on the business community and on state finances. In Phase VI of CCICED we could intensively address the implementation of the 2030 agenda, and particularly the environmentally relevant SDGs in order to advance sustainable lifestyles and economic practices in China. That would benefit China's economy and society and it would also help the climate.

Chairperson **Achim Steiner** then opened the floor to general comments and suggestions. Here are some of the ideas put forward by Council members and guests:

The importance of the world's oceans for global development, food production, resource exploitation, and other enterprises, calls for the need to integrate the environment into marine management regimes. Today we face great challenges with the oceans: pollution, problems with plastics, acidification that will hit harder this century, and an illegal, unreported, and unregulated fishery. The Intergovernmental Panel on Climate Change reports that many areas around the world, especially those already warm, will have a reduction in biomass production in the future. At the same time we are producing around 3% of the world's food from the oceans. We will have maybe 3 billion more people by the middle of this century. All this calls for a focus on the marine environment. CCICED has worked with that issue in the past, but we should carefully look at the balance between the marine and terrestrial focus in our future work. This will also comply nicely with the concept of ecological civilization.

We need to consider also the climate change in China that originates elsewhere. In recent years the scientific community has learned how teleconnections through atmosphere and ocean are quite strong and how they affect different regions of the planet. The best known example is the melting glaciers and ice sheets of Greenland and Antarctica that raise global sea levels. A more complex and less understood phenomenon is the likely effect from melting sea ice in the Arctic on climate and weather patterns, including in China. Understanding how these processes will improve adaptation strategies needed in China is another way of looking at the concept of "internalizing the externalities."

We also must mention communication and communication strategies. We have heard the suggestion that the Council should disseminate its reports more actively to different regional and local levels in addition to advising the State Council. If so, reaching out to different audiences will require different communication strategies. This means more resources for communication. To boost engagement we should identify concrete, showcase-type pilot projects that raise enthusiasm in society.

Another idea could be to embed more systematically in all our work the international value and dimension of that work. This could be connected to the G20, or to the climate negotiations post-Paris, or to the UN SDGs. If we systematically embed that in our future work, it will be easier to extract that in the policy recommendations and it will make those recommendations more relevant, more ambitious, and stronger.

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I am sometimes uncomfortable in such an elite group of middle-aged people who are deciding the future of the country with no input from its young people. CCICED should create a special forum and invite representatives of young people, and listen to what they want this country to be in the next 15 to 20 years. What do they want in terms of the environment? More comfort, more luxury, more fresh water? Today young people are creating huge disruptions in society, with new technologies, apps, fantastic inventions which are disturbing our lives and creating huge problems for established ideas. In Phase VI let's get some platform to listen to the aspirations of young Chinese.

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In the case of monitoring and data collection, don't wait for academic data collection. Today we can use our phones with the right apps to see the daily environmental situation. So we have to stimulate leaders in the next generation to give us more input for the Council.

Although all our reports are good, we still think in silos – soil, marine, air quality. We all agree on the need for implementation, but it can't be from a silo. It must be integrated. So our next step must focus more on integration. We can augment successful implementation by highlighting excellent pilots or other examples and bring them forward.

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We have heard from both the government and the Secretariat of an interest in "China in the World" being a theme for Phase VI. If so, it is even more important to rethink the composition of the Council. CCICED would benefit from being significantly smaller, in order to make sure it's at as high a level as it should be. But if the focus is China in the world, and that concept is largely build around a framework of South-South collaboration, then this Council ought to have much stronger voices from the South than it has today. So far it has been mostly Chinese and OECD representatives.

In that context it would also be helpful to have much stronger voices from the private sector, with the caveat that we ought to have leading companies in the private sector – those who embrace the sustainability agenda and have been driving it forward.

Regarding the idea to engage young people in the Council, the World Economic Forum has engaged in recent years “young global leaders” who are under 40 and “global shapers” who are under 30. This engagement has made a difference in that organization. There must be similar models that we can use in CCICED. It would really change the nature of these discussions. In particular it would take us into the potential for disruption, which we tend not to talk about. Many of the things we care about will be shaped by disruptions, not only in technology but also in business and governance models that we ought to be looking at.

The Council can do much more to ensure that its insights are better communicated to the public, but also to those specific decision makers we are trying to influence, and in a way that engages them. It is worth thinking about how we make sure there is effective ownership and engagement in the work of the Council from different parts of the government. Sometimes it is felt that CCICED is working first and foremost with MEP but we also need to cooperate with the Ministry of Commerce, Ministry of Finance, and so on.

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We should increase Council membership, on both the Chinese and the international side, with more lawyers or legal experts. In the past five years, the themes of our AGMs have always involved many topics related to law and legislation.

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The Council should invest resources and money in international outreach. In this room we represent altogether some 15 to 20 countries. We should conduct conferences and workshops where we reach out to these same countries to talk about the issues that we discuss here. This would fit nicely with the notion that in the next round we should focus more on China in the world.

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CCICED started when we were all donors, when China needed aid. During the past 10 years it has moved away from that status. We heard Minister Chen talk about the ability to reach down into the

provinces, towns, and communities, and to reach out, particularly in the South-South context. What does that mean for what the Council should look like, how it should be composed, and what its *modus operandi* should be? The task forces have been excellent, but they are expensive, and they take a long time to produce. We should be thinking more fundamentally, and asking what is suitable now for China? Above all we have to avoid becoming yet another forum for negotiating global environmental concerns.

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Chinese people like to use the words that end in -ization, for example, modernization, globalization, internationalization, ecological civilization. So why can't we use greenization? Four years ago in CCICED, China's most authoritative translating institution did not have full confidence to translate the Chinese term to "ecological civilization." Instead they translated it as "ecological progress." Then Premier Li Keqiang said that the institution must reconsider that translation. In the same way, we will come to accept greenization.

This is also a wonderful opportunity for South-South cooperation, because the biggest challenges for limiting the planet to these 2 degrees centigrade are still to be found in southern countries. China can learn from these countries. But meanwhile, why are such projects as the OBOR initiative and the Asian Infrastructure Investment Bank so warmly welcomed by these countries? It is because they need China's experience and also China's financial support for their infrastructure.

Since 1992 the Council has done a great job providing advice to China's central government, but how can we disseminate that advice to all the governments in China? Eco Forum Global is a wonderful platform that has deep roots in China. It was established in the poorest province, Guizhou, where per capita GDP is very low. It has now become China's wonderful model for ecological civilization and sustainable development. Some people call this platform the "green Davos." We should use that platform – the Minister of Environment is one of the founders – to disseminate our results and achievements to each province, county, city, and town, to business, academia, the media, and civil society.

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On the green side of the private sector there is a realization that probably 80% of corporate value is determined by non-financial capitals. What you return to shareholders is important, but as well as financial capital there is natural capital, social capital, human capital, and manufactured capital. These five capitals are the core of what we are trying to achieve with the term greenization. Focusing on those five capitals is about trying to become more relevant to multiple objectives. We should advocate for a future for this body that focuses on those five capitals and brings to the table the expertise that can speak to those capitals and present value in an integrated way.

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Given the pace of change and of policy-making, quicker response on the part of the Council could be a good idea. In this room are representatives of many institutions – the OECD, governments, UNEP, multilateral development banks, research institutes, the European Commission. If we are privileged to be part of this, then we should be putting our best foot forward in terms of being available, maybe through communities of practice, to put all of this brain power available in real time. While we should not relinquish these formal annual meetings and processes such as the task forces, in today's world we need something a little quicker.

I agree with the idea of including the private sector in the Council. There are multinational corporations that now really “get it” in a major way. It would be enriching if we could have private sector players better represented here. Everyone is making the point, rightly, that when this was set up it was basically about international experience helping China design its own policies. Some of that is still valuable, but increasingly when we talk about China in the world, it's not simply about advising China how to behave in the world. It is actually what China brings *to* the world, and that now it is much more of a two-way conversation.

Item 12. Open Forum 1: Greening “One Belt One Road”

This forum was co-chaired by **Li Ganjie**, China’s Vice Minister of Environmental Protection and CCICED Secretary General, and **Marco Lambertini**, Director General of the World Wide Fund for Nature (WWF) and CCICED member. **Li Ganjie** introduced the lineup of speakers, after which **Marco Lambertini** set out the framework for the discussion. Here are the main points of his remarks:

Large-scale economic development initiatives like this one face environmental challenges but also incredible opportunities – particularly the opportunity for China to apply at a region level the concept of ecological civilization and greenization. It is also a fantastic opportunity to integrate economic, social, development, and environmental protection, and to implement on the ground the principles of sustainable development. Another concept is participation. This is an opportunity to engage with different sectors – private, public, and civil society – at a real integrated planning level. These are some of the opportunities that make this initiative exciting and important.

Li Ganjie then offered these observations:

Integrating green development into the OBOR initiative will not only promote sustainable development in China but also in the region. This is a timely topic of great significance. In late 2013, President Xi, while visiting countries of the Association of Southeast Asian Nations (ASEAN), proposed that we should join to develop the Silk Road and the Maritime Silk Road. This proposal received a positive response.

The ancient Silk Road has connected the Eurasian and European continents. Many people traded along the Silk Road and helped forge close bonds among nations. Today, 2000 years since the beginning of the Silk Road, with the development of the past 30 years we have made a lot of progress that has been well recognized by the international community. We have great aspirations for future development. This is why China has proposed the OBOR initiative.

The objective of OBOR is common development on a win-win basis. At the same time we hope to share our experiences in development and protection of the environment.

There are important goals for us to realize with the OBOR initiative, including the development of trade, communication among people, protection of the environment, and so on. That is why we want to green the OBOR. But how to achieve this goal is a challenge.

Keynote speeches

Li Ganjie introduced the first speaker, **Dong Suocheng**, who is leading Professor at the Institute of Geographic Sciences and Natural Resources Research of the Chinese Academy of Sciences. He spoke about green development patterns of the OBOR initiative. Here are the key messages:

In 2013 President Xi proposed to jointly build the Silk Road Economic Belt and the 21st Century Maritime Silk Road in order to strengthen communications, trade, roads, currency in circulation, political trust, economic integration, cultural inclusion, and also to promote greater cooperation, development, and prosperity among the countries of Asia, Europe, and Africa.

Some areas along the Silk Road are rich with resources. They have complicated, fragile, and sensitive environments. Some are prone to severe natural disasters such as sandstorms, drought, water and soil erosion, and earthquakes. There are sharp regional economic disparities. The winds create high levels of pollution. Many of the countries along the route are less than 1000 metres in elevation. 36 different kinds of soils have created complicated ecosystems and diverse cultures. There is a lot of dust which produces black carbon, dust storms, and PM_{2.5}. In 2003, during conflict in countries to the west, oil wells were burning for months and the smoke drifted into the Himalayas and created severe issues on the Tibetan high plateau.

How can we green the OBOR initiative? Ecological civilization means a low-carbon, circular economy, a tertiary economy, eco-agriculture, and eco-parks – an eco-society. We also need an eco-court, eco-institutions, and an ecological civilization committee. How can we do all this? For China and for most of these developing countries along the Silk Road, achievement of a circular economy will depend on whether we can implement this kind of regime. If we can have this large circular flow of consumption and low-carbon development, it will produce an overall circular society based on reduce, reuse, and recycle.

An industrial circular economy should provide the conditions for an eco-tertiary sector. Qingdao has shown that this is possible. A regional circular economy would mean moving from village to town to city, then back to the village. A circular society implies green consumption and eco-culture.

We also need to set up an eco-tourism belt along the Silk Road. Some regions along this route have the advantage of rich tourism resources and rapid growth of the tourism industry. Natural parks and cultural relics are plentiful. Establishing an international barrier-free tourism zone would help build OBOR. We need also to set up barrier-free international facilities to promote tourism, deal with bottlenecks in transportation, and construct high-speed transportation and communication networks. There are a lot of cities along the OBOR and so there could be an urban tourism network.

This whole area has much pollution, sand, and dust. We probably need to set up an international scientists' consortium and think tank. Last year the Chinese Academy of Science set up a forum on OBOR. We call on more countries and scientists to join this, so that we can provide more data. We need to set up transnational construction and win-win cooperative mechanisms. We require some kind of monitoring, early warning, and emergency system. And we should collaborate on setting up methods of remediation for these areas, anti-desertification technologies, and technologies for the use of water.

Li Ganjie next introduced **Li Yong**, Council member and Director General of the United Nations Industrial Development Organization (UNIDO). **Li Yong** in turn introduced colleague **Stephan Sicars**, Director of the Environment Branch at UNIDO. **Stephan Sicars** spoke about resource efficiency and the circular economy in OBOR development. He made these points:

The Chinese government sees five means to achieve the objectives of the OBOR initiative: policy coordination and dialogue, infrastructure connectivity, unimpeded trade, financial integration, and people-to-people or cultural bonds. These five means form a strong advance, but there are still risks.

Sustainable development in total – especially if you come from the developed countries – means inclusive and sustainable *industrial* development, because industry actually carries the development, helps societies move towards prosperity, then towards stability, thus creating harmony. To get there, you need to minimize the environmental impact. Failure to focus strongly on environmental issues will undermine

the overall purpose of the OBOR initiative. At the same time, minimizing environmental impact will lead to sustainable industrial development. Competition will evenly increase across the board and that will lead to inclusive industrial development.

Growth (measured by per capita income) and industrial solid waste generated have been running essentially in parallel in China since 1990 – but in the past couple of years they diverge. This may indicate the first stages of a decoupling between resources used and increasing wealth. There are two ways of achieving decoupling: regulatory interventions or resource efficiencies. We favor the second solution.

Direct regulatory interventions (such as bans or limits) that involve more than 60 countries produce a couple of layers of added difficulties. If you use them as a precautionary principle then you have complex targeting and adjustment, and overreach is probable. As a concept, it is complicated for a large development program to carry through. It is challenging to design regulatory approaches that at the same time support growth. On top of that there is a tendency to address problems only when they emerge visibly – meaning as pollution – when actually you will want to minimize pollution at the outset.

Instead we see resource efficiency as a better solution. Resource efficiency means producing more with less: less energy, less water, and less raw materials. It means increasing product life, using designs that allow repair and disassembly, and reusing and recycling. All these relate to manufacturing. You have to change product design, upgrade repair facilities, and establish reuse and recycle facilities. The result will be not only sustainability, not only reduced emissions and pollution, but reduced waste, energy, and raw material use, and increased economic resilience and competitiveness.

China is in a good position compared with other OBOR countries, some of which have a lot of work to do. If you look at the current strategic OBOR approach, it creates a necessary basis but is not yet sufficient to ensure full success.

If we want to facilitate environmental protection and general resource efficiency, we face these challenges:

- the lack of know-how by manufacturers in design, manufacturing, raw material sourcing, and customer awareness;
- lower current costs but higher long-term costs at all levels;

- insufficiently developed infrastructure for repair, reuse, and recycling;
- and improved trade routes and agreements that increase potential for cradle-to-cradle approach by not only creating new products but by recycling.

Best practices have to be distributed, that is, to economic actors and not only on the institutional level. We need to work on product standards across the region in order to incorporate the necessary design changes. We need to include these concepts in regional supply chains. We support increasingly realistic resource pricing in OBOR countries. Reduced resource needs, increased efficiency, and related trade improvements will boost harmony across the region.

Magdy Martínez-Soliman, CCICED member and Assistant Secretary General as well as Director of the Bureau for Policy and Programme Support at UNDP, spoke of how a green OBOR can help achieve the SDGs:

The SDGs represent continuity with the Millennium Development Goals. They contain the basic social protection measures we have associated with development, health, education, and especially the fight against poverty. But the SDGs are different in some ways. The SDGs are universal. They identify global public goods that press against the planetary boundaries as a commonly desirable outcome for the future that we all want. Both rich and poor countries must report on their implementation of the SDGs. The SDGs include aspects of development that have much less emphasis in the earlier agreement, such as a better environment, job-rich growth, and more equality. And in a world with many interdependencies, between issues and among countries, the SDGs in goal 17 also call for strengthened global partnership.

The OBOR initiative includes a clear focus on promoting intergovernmental cooperation, facilitating connectivity, and stimulating the movement of goods, services, and people across borders. In many ways it is a road toward prosperity, peace, and sustainability. If the OBOR initiative can be greener, it could help as an effective vehicle to stimulate trade and investment, build infrastructure, and transfer technology to those who don't have it.

For this to happen, two mechanisms are needed: development financing, and input from the Chinese private sector.

If we look at some of the existing funding mechanisms for “green growth”, we see that the Green Climate Fund aims to mobilize US\$100 billion per year by 2020. The Green Environmental Facility has leveraged around US\$70 billion, including grants and co-financing, since its establishment in 1991. The World Bank has issued 100 green bonds in 18 currencies, raising the equivalent of US\$8.4 billion, targeting low-carbon and climate resilient growth.

Compare these to the resources from the Asian Infrastructure Investment Bank and Silk Road Fund which, for the OBOR initiative, will have a total of US\$140 billion in initial funding. If these resources can be targeted to green investment, these newly established financial institutions will be able to provide huge and comparable finance for green growth.

The second mechanism is business. It is recognized that businesses will play a vital role in the implementation of the SDGs. Here in China their role in the OBOR initiative is also expected to be huge. During the implementation of this initiative, Chinese businesses will increasingly go abroad to developing countries. Actively pursuing sustainable development through their business models can make a big difference.

Indeed, many are already doing their best. The *2015 Report on the Sustainable Development of Chinese Enterprises Overseas*, just released by UNDP and Chinese agencies, found that over 80% of Chinese companies with overseas operations recognize the importance of corporate social responsibility to corporate development and competitiveness.

Yet there is more to do. For instance, the same report found that over 75% of Chinese companies engaged third parties to conduct EIAs of their overseas activities – suggesting a high degree of concern for green and sustainable practices. Yet only 20% of them actually implemented the recommendations from these assessments, so they need much support if their concerns are to be made into reality.

This brings me to the role of organizations such as the UNDP in supporting green development financing and business. Over the past five years, UNDP has been partnering with China to share its unique development experiences with the world, while supporting China to strengthen its approach to South-South and global cooperation. Many developing countries are inspired by China, as its development

experiences are recent and relevant. Many of these countries have institutions and challenges similar to what China faced 30 years ago. At the same time, China wants to have a positive impact on the global goals achieved by other countries. Because there is this mutual desire for cooperation, UNDP should be there to support that and to help make it happen.

The next speaker is **Zhou Wei**, Council member and Chief Engineer at China's Ministry of Transport. His talk focused on building green healthy transport:

The OBOR initiative offers much potential for development. Connectivity is one of the most important goals, especially through transportation. We are faced with many challenges and opportunities. On the one hand, income has grown and people are becoming more demanding for health and environmental quality. On the other hand, transportation remains problematic. Private cars are overwhelming the cities. People's health is deteriorating because cars are replacing walking and bicycles. So we must change our way of life and improve the transportation system.

According to the 13th FYP, life expectancy by 2020 should be 77 years. However road accidents claim about 50,000 lives each year. People are becoming more demanding and expect more from a well-functioning transport system. In the UK, the WHO indicates that the cost of pollution caused by transportation is 2.9% of GDP. In Beijing, the economic loss caused by pollution is estimated at 4% of GDP.

If the trend towards private cars continues, this will affect negatively sustainable development and public health. So it is important for us to have the right options. To build a green and healthy transportation system in China, we must take a balanced and integrated view of the interrelated health impacts of road safety, air pollution, noise, and mobility issues in Chinese cities.

We can learn from international experiences,, such as London's transport action plan to improve the health of Londoners. It stressed that each governmental organization should be responsible for the health of the citizens in its jurisdiction. The American *Clean Air Act* requires the Environmental Protection Agency to establish national ambient air quality standards. The EU has invested in transportation infrastructure and thereby saved expenses on health.

China should adopt different approaches. We should:

- evaluate the current status of policies and measures and their impact on urban transport, environment, safety, and health in China;
- determine the causes of health problems related to urban mobility, especially in consumption and cultural patterns, for instance, private cars as symbols of wealth and status;
- take account of international best practices to identify strategies and methods to promote health in China's urban transport;
- establish a China urban transport health cost evaluation model;
- develop a vision for China's urban transport and national health, and propose policy recommendations and a specific action plan;
- and create discussion and debate among a larger group of stakeholders.

While we develop policies and new approaches we must coordinate among different agencies. We hope that in spite of all the problems we face at present we can work together for the OBOR initiative. We all want a fair, economically efficient, and healthy mobility.

Li Ganjie introduced **Jim Leape**, member of CCICED, Consulting Professor at the Woods Institute for the Environment at Stanford University, and former Director General of the WWF. He spoke about newly opened trade in the OBOR region and its implications for sustainable development. Here are the highlights of his presentation:

The challenge is to ensure that this new trade supports sustainable development in China and across those 60 countries. Three elements are needed to address that challenge: ensuring that trade is legal, that it is sustainable, and that it supports development in these countries.

When we talk about illegal trade we tend to think about endangered species, for instance, trade in ivory or tiger parts. That's a significant problem, and opening up trade makes it harder to catch that illegal trade. But the fact is that illegality besets a much broader part of the world's trade. 15% to 30% of the timber in trade is illegally harvested, and that figure is 90% from some countries in this region. Similarly, 15% to 30% of fish in trade is illegally harvested. So ensuring that trade across OBOR is legal is of central

importance. Illegal trade undermines governments' attempts to safeguard their own resources. It defeats those who are trying to do things right. It cheats producers who are trying to produce sustainably. And in many countries it fuels corruption. So the first challenge is to make sure that as trade is opened up, that trade is legal.

The second challenge is to make sure that trade is sustainable. The global trade in commodities is a major driver of resource destruction and a major source of water scarcity across OBOR. It is also a driver of deforestation. Something like 70% of deforestation results from conversion of forests for commercial agriculture. We see that scenario playing out in Indonesia where more than 100,000 fires have been lit, the haze from which is choking 40 million people. The GHG from those fires on most days has exceeded the daily emissions of the United States. It is a huge climate and health issue. So, making sure the trade is sustainable is important to the global environment but also to the local environment.

Finally, does the trade support development? As we pursue sustainability, we have to make sure we are pursuing sustainability that is serious about development. As trade opens up, we have to make sure that governments are supported in strengthening their own governance, their own capacity, to ensure sustainable development. And there has to be investment to help producers transition from current practices to more sustainable practices. That need is particularly acute where you have small producers, such as in the palm oil sector where there are many small farmers who cannot transition to sustainable production without financial help.

We know the solutions to these problems. Several measures have been adopted internationally to control illegal trade in timber and fish, so partly this is a matter of embracing those measures. In terms of sustainability, there are now in every major commodity sector accepted international standards for sustainable production. In many cases there are certification regimes that allow you to quickly identify goods that are sustainably produced. Embracing those regimes is an important part of ensuring that this opened trade is sustainable.

Clearly, development assistance has a central role here. It is critical to building hard infrastructure – roads and harbours – but also soft infrastructure, such as the governance and capacity it takes to translate those opportunities into sustainable development. China has already done a lot in this area. China has embraced the Forest Stewardship Council in a serious way, for example, in the certification of sustainable

timber. More than 3 million hectares here in China have been certified, and more than 3000 companies in China have the certification from this body. You see the beginnings of that happening with fish as well. China has a good story to tell on some of these issues in terms of how it has managed its own resources.

Next, the Council heard from **Wang Xiaokang**, Chairman of the China Energy Conservation and Environmental Protection Group. On the theme of “think in green” he made a number of points:

It is impossible to be successful in this OBOR initiative without the companies. In the past 30 years China has walked the journey that took the West 100 years. This has resulted in many environmental problems. This is why we have an even stronger feeling for the improvement of the environment. Chinese companies have learned a lot. This is why green and energy saving industry has been developing quickly in China, at a rate of 15% each year. We have already greatly improved our strength and competitiveness. Chinese companies and industries are more than willing to share our experiences with other countries in order to make OBOR a success.

ASEAN countries will produce about 200 million tons of waste each year. If the waste can be well utilized it can be used to generate electricity. In this area we are willing to cooperate with other countries so that we can share our experiences to promote prosperity. My company has many projects in Pakistan, Sri Lanka, and Bangladesh. We have solar energy buildings. With our projects we have generated many job opportunities for local people. My company can produce as much waste as a medium-sized country can do each year.

Here are ideas for future collaboration. We have many advantages in the development of infrastructure, including the generation and transmission of energy. We have already set up more than 200 power plants with processed waste as our energy source. We have other technologies in water and waste treatment. Our company has had many successes in the setup of ecological parks, which are circular, environmentally friendly, and energy efficient. They can help reduce the consumption of energy and the emission of pollutants. Since the beginning, our economic capacity has increased about 600 times. We play an important role in attracting talent from around the world and in the development of human resources.

We need consensus among countries along the OBOR to provide multi-level organizational guarantees and innovative policy support, for example for project approvals, fiscal and tax matters, financial bonds, foreign affairs administration, customs control, and expansion of the cooperative region.

Li Ganjie then gave the floor to **Lim Haw Kuang**, Council member and Board Director of the BG Group, and former Executive Chairman of Shell Companies in China. He told stories that conveyed lessons about environmental protection:

I am a businessman and will give you a business perspective. I am Malaysian. 20 years ago, when I was appointed chief at Shell, I did not worry about my oil and gas business for months. It was because I was involved in fighting air pollution. The haze was like the end of the world. It was caused by Malaysian plantation workers who were conducting slash-and-burn techniques. It was completely out of control. Fast forward to today. For the past few months, Malaysia and Singapore again are under heavy haze, but this time it is coming from Indonesia. When Malaysia and Singapore offered to help, the Indonesians said thank you very much, but all those big bosses who are running these operations, most of them are Malaysians and Singaporeans. So maybe there should be a headline: *What we should **not** do when we promote economic activities*. A few years ago, when CCICED met with Premier Wen Jiabao, he said: We will not promote economic development at the expense of the environment. So maybe when we talk about the OBOR initiative we need that same headline in the heads of everybody: policymakers, the public, the private sector, state enterprises, and communities.

In the AGM theme two critical words caught my attention: governance and capacity. Without proper governance you cannot manage well. Without organizational capacity we cannot execute well. We are all acutely aware of the recent Tianjin chemical explosion. Safety and the environment are twin brothers. If you don't do safety well, you mess up the environment. Lessons can be learned from the Tianjin event. Although I don't know the outcome of the investigation, my suspicion is that it has a lot to do with compliance and execution.

I want to comment on something China has been doing effectively that has gained international interest, attention, and respect. That is the current anti-corruption drive, spearheaded by the central government. There is clarity about it. There is visibility of the actions taken, and transparency of consequences. I ask

myself: if we treated environmental protection in the same way we fight anti-corruption, how would we look?

When Li Keqiang was appointed premier, he attended a first engagement with CCICED in his new capacity. He was asked: What would CCICED need to do differently to be effective? His answer: In terms of policy recommendations, I would like to know how to do things right. So, ladies and gentlemen, maybe it is time to think about how to do the right things right.

Finally, **Li Ganjie** introduced **Diane Regas**, the Executive Director of the Environmental Defense Fund. She spoke about how China can use the OBOR initiative to “export” its own environmental experiences. Here are the key points:

The Environmental Defense Fund is guided by both science and economics. We have always based policies on the best available science. We were the first environmental group to hire economists. We find practical and lasting solutions to the most serious environmental problems. The priority problems we focus on – climate, oceans, ecosystems, health – are problems of the global commons. They transcend national boundaries.

China’s OBOR initiative is a major opportunity for China’s environmental management agencies and stakeholders to go abroad. In recent years many Chinese enterprises have ramped up their foreign investments at an increasing pace. China is likely to become a net capital exporter soon. The formation of the Asian Infrastructure Investment Bank is more than tangible evidence. The result is that China is a global economic power exerting a stronger influence on the environment – an influence that will be amplified by the OBOR initiative. Chinese companies, investment, and culture are all going abroad. We have to ask, should Chinese environmental management experience cross the boundary as well? I believe the answer is yes, and I would like to share some suggestions for China to consider:

The internationalization of Chinese NGOs should be an important adjunct to China’s OBOR initiative. Many countries along this path would benefit from sharing China’s experience of grappling with environmental problems. China knows all too well the costs of pursuing development without regard to

the environment. In light of the current situation the exploration of Chinese social groups' paths towards internationalization becomes an urgent task.

The Environmental Defense Fund has established a strong strategic partnership with the China Association for NGO Cooperation (CANGO). CANGO is a good example to share. One of its primary missions is to help other grassroots Chinese NGOs and to act as a bridge between foreign funders and Chinese NGOs focused on poverty alleviation in remote parts of the country. Acting as an umbrella for these smaller NGOs, CANGO helps mobilize funding, build capacity, and promote effective project management.

The OBOR initiative holds great promise for economic progress for many people. It can and should become a vehicle for environmental progress. This also means incorporating environmental lessons that China has learned the hard way so that it becomes a *green belt* and a *green road*.

The model offered by CCICED is useful. CCICED was founded more than 20 years ago with an express mission to share the best environmental practices from around the world with the Chinese government. The discussions over the past two days illustrate the power of this model. Possibly this could be part of the government's outreach in OBOR, and it could seed similar environment and development councils along the OBOR path.

China's new basic environmental law holds other important lessons to be shared. For example, China has to get the incentives right. Prior law capped financial penalties at artificially low levels, way below what it would cost to control emissions. Chongqing was a pioneer in testing financial penalties without caps, penalties that ran cumulatively from the day of violation to the day of compliance. Companies there now recognize that it is cheaper to control pollution, and so they do. This story can help others avoid a long period of expensive learning in the form of unnecessary environmental damage.

This past November the APEC meeting in Beijing witnessed the birth of the green supply chain network in the Asia-Pacific region. The chain uses the market power of buyers to require suppliers to adopt environmental performance targets. But what if all Chinese companies going abroad took this on board as a corporate policy? The values of corporate social responsibility can make this an engine for green transformation. NGOs and think tanks working on green supply chains in China can take this initiative

outside China to ensure that investments made outside the country help advance environmental protection.

On the topic of carbon trading, in September 2015, while in the United States, President Xi surprised the world by announcing that China would implement a national carbon trading system in 2017. China can carry this message further. For example, last year's trade mission to Pakistan, in which some US\$48 billion in infrastructure investment deals were linked, was followed by Pakistan's announcement that it was exploring carbon trading. This is exactly how OBOR can be used to extend China's experience to others, inspire others to take action, and build toward a world where carbon is priced.

China's amended air law places new emphasis on the regional control of pollutants. For many years China, South Korea, and Japan have discussed regional environmental cooperation. This type of coordination should be broadened throughout the region, especially along the OBOR path. Air emissions are only one environmental component needing cooperation. Water resources, both quality and quantity, are another. Forests and biodiversity assets would also benefit from regional cooperation. Valuable resources, such as fisheries, should also receive regional attention.

Multilateral lending institutions have done a lot to stimulate economic development and help lift people out of poverty. At the same time there are many examples of projects whose environmental impacts and costs have seriously diminished the underlying economic benefits of the project. Most of these institutions have worked to address these problems by developing environmental criteria or conditionality to guide their lending practices and lending decisions. It will be important for China to assess the effectiveness of these practices in their real world application, pick the best of the best, and use the Asian Infrastructure Investment Bank to ensure that project benefits are truly maximized. Environmental conditionality on bank lending would be a powerful policy to avoid locking the region into significant increases in GHG emissions.

Following the conclusion of the formal presentations, co-chairperson **Marco Lambertini** made these observations:

We have heard clearly the need to adopt strong environmental standards and objectives – objectives that can and should be measured as the program is implemented to ensure that OBOR is benefitting and not harming sustainable development.

The first obvious principle is about impact or damage to the natural systems that are so critical to support the integrated development objectives of the initiative. This is about the ecosystems and species in the region.

We need to be sure that free trade will not incentivize the illegal side of the trade, a side which is serious already and which involves a number of commodities and resources including timber, fish, and wildlife.

It is important to remember that this initiative should not weaken but it should strengthen environmental legislation, both national laws and international legislation such as conventions. It is an opportunity to promote the sustainable use of natural resources – forestry, agriculture, fisheries, all down the road. This opportunity is linked strongly to the promotion of certified commodities.

In the case of infrastructure or agricultural development, everything will come down to good integrated spatial planning. We must recognize that – before we enter the design phase – the important places, ecosystems, water sources, and natural systems that will be critical to the true achievement of sustainable development should be taken into account. Perhaps we should adapt the already well-established concept of the red line that the Chinese government has applied within China. We could identify all the places that need to be taken into account, need to be handled with care, and should not be damaged or impacted by the development of the initiative.

Marco Lambertini then invited two short presentations, first by **Zhou Guomei**, Deputy Director General of the China-ASEAN Environmental Cooperation Center of MEP, and then by **Li Ganjie**, China's Vice Minister of Environmental Protection and CCICED Secretary General.

Zhou Guomei shared her ideas about the greening of OBOR:

The Chinese government has already said that eco-considerations should occupy an important part in this whole initiative. At MEP we are taking this seriously. We have already started some planning and strategizing about the greening of the OBOR.

If we look more closely at the protection of the eco-environment, we see that a number of main lines run through all of this. One is that in the planning process we need to think of an eco-friendly environment and green development. This should permeate all our designs and plans for this region. A second point is that we should actively try to prevent certain issues occurring. We should supply central assistance. And a third point is the importance of international cooperation, because OBOR encourages us to carry out South-South cooperation and development.

On the basis of these lines of thought, we are trying to provide services and support, particularly in the sense of setting certain standards and objectives, such as environmental criteria and standards in services like green financing, to guarantee green investment. Another aspect is to provide the right technologies for the greening of OBOR.

The key issue for enterprises and businesses is industrial cooperation so that we can set up environmentally friendly products and technologies. Products and trade should all consider using and adhering to environmentally green standards. We must set responsibilities for the enterprises, companies, and businesses that will enter this region. We should set up demonstration parks and pilot projects, and we hope that environmentally green businesses will support this effort.

Regarding structural guarantees, we believe that policy should lead the way. We should have a regional environmental protection policy and guidance, and technical guidance.

The supply chain should use green standards. These should be the engine for the greening of OBOR. Under MEP and the US Environmental Protection Agency we have already set up demonstration projects for green supply chain in Tianjin.

We should encourage and increase green investing, green funding, and green financing. We need green structures and institutions, and there should be more cooperation and integration with international organizations in this regard so that we can promote green banks.

We need a platform for information exchange. MEP has already set up a team to start a series of reports on the countries along OBOR and to engage in assessment, so that when we choose the places for important projects we will have assessments of environmental risks and of things to avoid.

OBOR has given us a good opportunity to engage in international cooperation, research, and study. We are going to set up three platforms or systems on environmental protection, cooperation, and emergency protection. These are technical or information exchange platforms, and we hope these will promote environmental cooperation in this area.

Then, **Li Ganjie** gave a summary of MEP's position on the OBOR initiative:

I have been in charge of the related issues in my position as Vice Minister of MEP. There are a few important factors.

First, we will advocate the concept of a green OBOR. This concept should be engrained in the minds of people and we should also reach consensus among officials.

Second, it is urgent to develop platforms for communication among China, the countries along the OBOR, and the international community so that we can share experiences, best practices, and lessons learned. Only then can we have the close connection among people to foster mutual understanding and trust, which are the basis for solving problems.

Third, we must have a supporting and enabling system for information and data. All the information on policies, rules, and regulations should be integrated in this system so that we can provide more support for companies. Companies are one of the most important players in the initiative. To support them we must have a national platform so that we can all better know the laws and regulations.

Fourth, it is crucial to have more bilateral and multilateral cooperation, especially in specific projects. Regulations, guidance, and supervision are important in the process of cooperation, so that all players involved learn to observe local standards, laws, and regulations. We hope the companies are conscious of the importance of this.

Fifth, China has been open to the outside for more than 30 years. Because of the development of our economy and finding more solutions to our problems we have accumulated some experience. We hope that we can support the development of other countries by sharing own experience.

Finally, we also hope that we can green our financial mechanism. The success of the OBOR initiative cannot be separated from a green financial system, and a green financial system can support the whole process. We are making efforts to involve the Ministry of Finance and other ministries.

General debate and comments

There is a legend out there – about multi-national companies – that has nothing to do with China. The legend says that multi-national companies do not respect the law, either of the country they come from or of the country where they operate. Actually the opposite is true. More often than not, these companies do respect the law. The question is: does the law of the land where they operate have loopholes that they exploit? Another legend is that multi-national companies are not transparent, or they do not employ local people, or they do not build a value chain but instead conduct turnkey operations. All these elements have crystallized in an image that presents Chinese operators abroad as edging toward the predator image – irresponsible from the point of view of corporate social responsibility, unaware of environmental and social impacts, and so on.

But the report we have just produced with our Chinese counterparts suggests that Chinese companies abroad are no better and no worse than others. Let me give you some facts. Chinese businesses have paid some US\$20 billion in taxes to developing countries where they operate. They have employed about a million people abroad. That is not enough, certainly. We are aware that Chinese companies tend to bring their own labor force, engineers, and management from China to deliver the services, goods, products, and infrastructure they have contracted for. They need to make some effort in that sense.

Regarding greening of the OBOR initiative, in no way are Chinese corporations a negative partner for sustainability. The fact we have published this report in collaboration with the Chinese government is proof of transparency and of intent to increase the level of reporting and accountability. These Chinese companies have subjected themselves to a level of scrutiny that is unprecedented. I wish other countries would follow the example and publish the number of companies that operate abroad, the number of people they employ, the number of contracts they hold, and the taxes they pay. From that viewpoint it contributes to a more evidence-based and less legend-based outlook.

The principle of “do no harm” is a basic responsibility but one that we sometimes forget. In every development operation, especially when there are large interventions in infrastructure, social and environmental safeguards need to be applied. We do believe in transparency, in a pre-ordained code of conduct, in clear mechanisms for complaints and redress, and in the idea that corporations have a responsibility to the broader public regarding the environment and social impact. We hope to see the OBOR initiative establish a broad social and environmental safeguard mechanism so that we can say indeed: the belt is green, the road is green.

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In his presentation, Wang Xiaokang mentioned policy support. This is a critical issue with OBOR and the concept of greening. Companies, private citizens, NGOs and civil society will play their roles, but the government should play a powerful role in policy support. In the context of the OBOR initiative it should deliver a policy that is conducive to develop the economy, infrastructure, trade, tourism, business, and economic growth. Regulations should be sound. But, how can we give the signal to companies, to the private sector, to act according to international norms and agreements? Regulation is not just to monitor the guy who is acting appropriately; it is also to let the private sector know what they should do and how they should act according to best practices.

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From the viewpoint of a conservation NGO, one of the most exciting developments of the decade is the leadership of some big multinational companies in addressing sustainability issues. Some headquartered in the West, some in Asia, are taking leadership roles in addressing issues like water scarcity and deforestation, not only within their own supply chains but more broadly in the communities and countries where they work. The future depends in part on building on that leadership and bringing more companies into the vanguard of actually being agents of sustainability, worrying not just about the cleanness of their own operation but worrying about the broader role they play.

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I want to highlight and reinforce this: one strength of the Chinese approach has been to focus on implementation and to conduct trials, whether it is carbon trading or green supply train, and then learn

from those trials and expand. That kind of implementation and execution is an important lesson to be learned and to apply to the OBOR initiative.

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Despite the good record of Chinese companies, they have not been positively covered in the mass media. Of course we have to admit that some companies do not abide by local laws and regulations. Most Chinese companies have done well, however, and besides, China has strict guidelines for Chinese companies operating overseas. When we operate overseas we work together with overseas consultancies and local companies. However we need an open and transparent platform. When we first went to foreign countries we did not know much about their laws and regulations. That was so in the past. Now, when we plan to go to another country, we know clearly what we should and should not do.

Companies want an orderly and fair market. If the market is managed in this way, more companies would like to get into that market. A lot of developing countries where we operate do not have a sound legal system. It is therefore crucial for us to make joint efforts to foster a fair and transparent market with good competitiveness.

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When I think of a road I think of motor vehicles, and when I think of vehicles I think of diesel. As we heard, diesel particulate is hazardous to health, and the black carbon component is significant for climate change. An aspirational goal we should consider is some incentive for diesels along the Silk Road to use low sulfur fuel and to have particulate filters. In some places it could be a regulatory requirement. China will have low sulfur fuel across the country by the end of 2016. India will have it by 2020. The Middle East is producing a lot of this fuel. So, along the OBOR corridor, the fuel could be available and therefore you could give some advantage to those diesels that have filters.

Similarly with the maritime route, there is already discussion going on among China, Korea, and Japan to create an emissions control area for the entire coast. Why not extend it down to the south? Again, at least aspire to do that, because only with emission control areas can ocean-going vessels have low sulfur fuels and clean emissions.

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Until recently, the only inter-governmental organization based in China was the International Network for Bamboo and Rattan. It represents 41 nations that produce bamboo. Many of those are in the OBOR area.

The current global market for bamboo is worth about US\$60 billion. Most of that is produced in China. Environmentally, bamboo can help with land restoration. They could be a major source of climate change mitigation, as they absorb carbon like no other plant. They are of course food for the pandas, and have an important biodiversity aspect. Socially, bamboo currently employs about 7.5 million people in China, maybe 10 million by 2020. Therefore bamboo could create jobs in many of the OBOR countries. And once you make it into a commodity and start trading, there are many other institutions that can deal with the product. I believe therefore that bamboo is an opportunity for greening the OBOR initiative. China is already working on this through South-South cooperation, through technology transfer, and capacity building, but we believe much more could be done.

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Chinese businesses function according to the Chinese way of doing things. Of course the Chinese government provides a lot of guidance. But when we look at OBOR, all the countries along it will be in different situations and their demands and expectations will differ. I hope that enterprises will communicate with the public, with governments and industries, and with NGOs. There should be close attention to what these countries want. We hope that Chinese NGOs can also go abroad and can have offices in many countries.

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In greening the OBOR initiative, we hope China can lead the way and be an example. We hope that enterprises, their operations, their behaviour could be closely linked with the image our country projects abroad. MEP should work with the Ministries of Commerce and various Chambers of Commerce to produce guiding principles on the green image we wish China to convey. We can also call upon all our enterprises to abide by the Chinese policies for environmental protection. And if these various countries don't have this kind of legislation, would the Chinese legislation be a limitation on these enterprises abroad? In this way enterprises could contribute to the whole issue.

It is good to hear that Chinese enterprises don't behave any differently. When we go abroad we want to be on the same level with other countries, so when international CCICED members talk about this issue you should give us equal treatment.

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Greening the OBOR takes time. If we have learned anything, it is that rapid economic growth is on the one hand desirable but on the other hand it gives us little time to reflect and think. In that regard we should be encouraged by Vice Minister Li Ganjie's six-point suggestions. All of them show that we have the patience. They develop the enabling conditions to do this well.

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We should pay attention to the customs and habits of the countries in the OBOR corridor. In many of these countries the protection of forests and biodiversity is crucial. We need to pay attention to local laws. That way we can be accepted by the communities. They will accept our enterprises and our business better, and it will improve China's image abroad.

* * *

We talk about China's role in greening OBOR. What about the role of the international community, especially bodies like the World Trade Organization? Its job is to promote free trade and facilitate investment. This is not coherent with sustainable development. How can we green the World Trade Organization?

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There are at least two things we can do to green the World Trade Organization: there is huge potential in engaging the private sector to find ways to drive sustainability into markets. And we need to support countries in the OBOR region to develop the standards, governance, and capacity it takes to conserve the resources that are at stake.

Item 13. Open Forum 2: Think Tanks for Green Transition

The co-chairpersons of this forum were **Liu Shijin**, former Vice Minister of the Development Research Center of the State Council, and **Roger Beale**, CCICED member, former Secretary of Australia's Department of Environment and Heritage, and member of Australia's Climate Commission.

Keynote speeches

After brief remarks, **Liu Shijin** introduced CCICED International Chief Advisor **Arthur Hanson**, former President of the International Institute for Sustainable Development. His talk was titled "Profile of a Unique Think Tank." Here are the highlights:

What are the general characteristics of a think tank? It has to hold independent perspectives and deliver high value-added. It must be well-networked, otherwise it is useless to government and to civil society. It has to have a clear focus. It has to deliver priority demands. It has to have the capacity to self-renew. It must be adaptable. And finally, it must have quality control.

CCICED has been labeled a think tank ever since it began a quarter century ago. Now it is challenged to become a permanent body capable of consistently high quality work relevant to China and to the world. CCICED is an advisory source to senior levels of the Chinese government, with access to outstanding expertise, international and Chinese, with high convening power and with continuity since 1992.

There is cooperation through CCICED, primarily with government but also with enterprises and social organizations. We now have the capacity to actually test policy recommendations with pilot projects – for example, the green supply chain project in Tianjin. Also we have influence beyond our primary purpose. CCICED has become a conduit to understand China.

We think of CCICED as a "think tank of think tanks," with the capacity to access outstanding expertise. We draw upon existing work and translate that into something that is valuable, from the viewpoint both of China and of the world. We have formal agreements with leading research partners, such as the World Resources Institute, UNEP, and so on. Those connections are valuable for the future capacity development of this idea of a think tank in China.

We set our recommendations in the context of Chinese characteristics and situations. We expect we will continue that approach, even though we think it is time to redesign some aspects of the China Council.

In the future, CCICED might tackle a broader array of topics. We must get into finance in greater detail, innovation, and information technologies and big data. Environmental and social policies is another area that will become increasingly important. Some of the things we need to address are: shifting the balance of law towards enabling laws and instruments; use of market instruments; and implementation policies.

An essential feature of CCICED in the future must be the continued recognition by Chinese leaders that this organization is a senior voice on environment and development, with combined Chinese and international expertise. And we need to have diverse funding sources, so that we can maintain the independence we need.

Some of the issues the Council will confront in future:

- balancing domestic Chinese work with work on “China and the World”;
- setting leadership policies that require different kinds of thinking; China wants to take a greater leadership role in the world now;
- capacity development for CCICED itself, so that we are able to do consistently high quality work;
- and institutional arrangements for a permanent organization.

Phase VI is a key time to transform CCICED and the process must begin immediately. We need a strong buy-in from the Chinese and the international communities. We need institutional strengthening (meaning greater continuity), a refreshed work model, and nimble response capacity so we can address things quickly. We need very strong affiliations with other think tanks both in China and outside.

The forum next heard from **Dirk Messner**, Council member and Director of the German Development Institute and the German Advisory Council on Global Change. He spoke about the knowledge needed for green transformation. Here are the main points:

If we argue that green transformation towards sustainability requires profound changes in society, economy, and governance systems, that is not just incremental change. That is profound change. The same is true for knowledge systems and research systems. We also need transformation in the knowledge system itself.

What kind of knowledge is needed? We can differentiate three types:

Transformative knowledge is about elements of the system – whatever system it may be: the economy, society, business, community – that you need to change. It is about technologies, social and institutional innovations, smart grids, storage capacities for renewable energies, emission trading schemes, eco-taxes. Most of our research organizations are doing this kind of work.

In the German context we still have a separate knowledge system when it comes to economic development. In Germany we do have a high-tech strategy to improve German competitiveness. Sustainability is not an issue there. And then we have a big field we call sustainability research. There, all our community is engaged, but the bridges between the economic stuff and sustainability are not solid. If you want to do good transformative knowledge creation, the bridge between competitiveness and sustainability needs to be much stronger than it is.

Transformation research focuses on the radical makeover of entire systems – such as transforming the whole governance system in China. From our perspective this move towards ecological civilization or green transformation compares with two or three other big shifts in human civilization. The first was the Neolithic Revolution when humans invented agriculture. The next big shift was the Industrial Revolution which has been a driver for the past 250 years. Now we are in the third big period of transformation.

We need to reorganize the basic structures of our economies, our governance systems, our thinking, and our consumption patterns. We call this a Great Transformation. Understanding these entire shifts of system is different from focusing only on elements of a system. So how do entire systems actually change? We have little knowledge about that because we have so few examples for these big kinds of shifts.

There are two types of transformation research:

First, we have to bring together the understanding of social systems (our societies and economies), the earth systems and ecosystems (natural science-based) and then technical systems (what engineers do). We need a radical trans-disciplinary approach, and we need to reform our research institutions to make cooperation among these pillars of science possible. We are still at the beginning of this process.

Second, another kind of knowledge when it comes to transformation process tries to answer the question: how do Great Transformations of societies work? I think we need to look much more at theories of social change to understand such entire shifts of societies.

Trans-disciplinary research is about how we as researchers work with others. It is science for society, for the economy. The cooperation between actors in the economy and us as researchers is the key. It is about the co-production of knowledge and good strategies to diffuse knowledge. Very often this is not the most efficient side of the work that knowledge institutions do. We produce good knowledge, but we don't communicate. We usually don't work together with decision makers. So a culture of cooperation among research, economy, and society is urgently needed.

What are the basic drivers of green transformation, and what is the role of knowledge and research institutions? We did historical studies on big transformations: the Industrial Revolution, the so-called structural adjustments in the 1980s in Africa and Latin America, the abolition of slavery, and so on. We found a basic pattern behind these bigger processes. There are always four important drivers of change:

- *vision*. You need more than a good program analysis (ecosystems eroding, climate change). As well you need a grand vision that explains what you want to do (ecological civilization).
- *technologies*. You might have fantastic vision, but you also need the technical means to advance toward it.
- *knowledge* for the transformation.
- *crisis*. The most important drivers of big transformations have always been crises. This is a crucial point for us, when we think of the tipping point of climate change. We have to avoid the crisis model and substitute the knowledge model. This is an historical challenge for us.

Scaling up international knowledge cooperation and joint knowledge creation – this is what CCICED is about. We need global transformation, therefore we need global knowledge. In the World Bank, 85% of

the knowledge it produces for global development is created within that institution, without consultation with the other institutions with which the World Bank works. This is about creating legitimacy. If we want to change international patterns, knowledge cooperation and joint knowledge creation are starting points for legitimizing joint action internationally.

Next the forum heard from **Xia Guang**, Director General of MEP's Policy Research Center for Environment and Economy. He spoke about how think tanks can promote the realization of the SDGs. Here are his key points:

The SDGs include hundreds of indicators in 17 areas. It's easy to set goals, but implementation is challenging due to the overall complexity. That's why think tanks can make a difference.

The SDGs cover economic, social, and environmental aspects. They highlight the welfare concerns of humans, especially those in vulnerable groups, and emphasize the development of sustainability. China responds to that call for sustainable development by promoting the construction of ecological civilization. We put in place guiding opinions as well as implementing rules for such goals as well as for the proposed 13th FYP.

So, for economic and social development, China's GDP will double from 2010 to 2020. By 2020 industrialization will be completed, and urbanization will have increased dramatically. To achieve the goals of an overall improvement in living standards and reduction of the income gap, the traditional pattern will no longer be sufficient. That's why we will specify certain green indicators, such as reduction of CO₂ per unit of GDP, control of total and industrial water consumption, and many others related to the greenization of air and water quality, coastal waters, biodiversity, and so on.

A "source prevention, process control, damage compensation, and accountability" system of ecological civilization will be formed. Critical outcomes in reform in major areas are to be achieved, such as natural resource assets property and use control, ecological red line, ecological compensation, environmental protection and management administrative systems, and so forth.

Ecological civilization and the SDGs both emphasize the balance and integration of development and environmental targets. That's why we say that China's ecological civilization is an upgraded version of the SDGs and is commensurate with the SDGs.

Let's talk about implementation, which is more challenging and complex than merely formulating these goals. Think tanks can play a role in four areas:

- *Design a clear path or top-level design for implementing the SDGs.* There are many theories as well as practices, so we should combine them to put in place a feasible roadmap.
- *Experiment with different sustainable development models,* for example, with what China is already doing, or what has been done elsewhere.
- *Track and evaluate the progress of global sustainable development.* There is a big disparity among economies, so there is a need to track and evaluate.
- *Accelerate the international negotiation and consultation process of sustainable development.* There is a need for governments to negotiate to achieve these goals. Before this process begins, think tanks can help governments prepare.

What are the expectations of Sino-international think tank cooperation? For example, how to assess the progress of the SDGs? In 10 to 15 years after the proposal of these goals we can assess whether they have been achieved. It's difficult for developing countries to make this evaluation, where their capacity is weak. So think tanks from developed countries can help in this regard.

How is China to learn lessons and experience from developed countries during the process of constructing ecological civilization? How to reform China's environmental governance system? How to improve the capacity of Chinese think tanks in the field of environment and development? Chinese think tanks have a certain capacity but we are not the most advanced, so there is a need for us to learn from think tanks in other countries.

Yvo De Boer is Director General of the Global Green Growth Institute. His presentation described that organization and its role in delivering green growth:

The institute I work with is not so much a think tank as a “think and do” tank. We were established as a treaty-based international organization in 2012. At the moment we have 24 member countries. Our primary focus is to foster a resilient world of strong, inclusive, and sustainable growth. This means we are trying to drive strong economic growth, but in an inclusive way that is meaningful to people at the lower income side of society while minimizing negative environmental impact.

We focus on energy, water, land use, and green city development. We always begin with a process of looking at how a number of global trends – such as climate, energy, food, water, biodiversity loss, desertification, materials scarcity – how such trends are likely to affect a country in positive or negative ways, then take that finding to macroeconomic impact assessment, look at policies and institutions that are in place, look at investment requirements to take economic growth in a different direction, then come to the actual implementation. We do that by working in-country, as advisors to government, embedded in government institutions. In Ethiopia, for example, we sit inside the Prime Minister’s office, and in the Ministry of Finance and other departments.

At the moment we work in 22 countries with 34 programs or projects in those areas. We are very much embedded in government. Our head office is in Seoul where we provide knowledge solutions in support of national programs.

In the Philippines, 85% of the economy is vulnerable to the impacts of climate change. There, we are focused on making local communities resilient to the impacts of climate change, and changing economic models to adjust the livelihoods of local communities to those impacts. In Colombia, where deforestation is an issue, our focus is on building a payment-for-performance scheme to preserve the forests that are in place. In Jordan we concentrate on an economy-wide sustainability strategy for energy, agriculture, and tourism, trying to adjust the economic model to the future. In Ethiopia, we are working to further a fantastic ambition. Ethiopia wants to become a middle-income country by 2025 – but to achieve that goal without increasing its GHG emissions.

How do we do that as a think tank and a “do” tank? We provide a knowledge platform by facilitating information exchange. We make available to countries tools that they can apply in their national context, based on experience from abroad. A strong part of our contribution is capacity development. Often, a core problem is institutional weakness. We help design projects and programs. We develop global

platforms and approaches. We provide access to finance. And we try to link the national to the international.

Increasingly we have been involved in finance. A strong primary focus for us is the development of bankable projects. The world is awash in capital – but the money is not going green. Money goes where the best return can be achieved at the lowest risk. So a big part of our job is working in member countries to develop bankable projects to meet the risk and reward criteria of investors.

That involves also the design of risk mitigation products. How can you reduce the risk around green investments? By a concentration on the development of domestic green finance institutions that can blend the functions of project design with accessing the international finance that is out there.

We are helping to scope green growth opportunities in China, and in that context working on the development of a green growth roadmap for the 13th FYP. Also in China we are working to develop methodologies to access climate finance and test it through a pilot. And we are doing some work on the greening of international financial flows, including the role of the Asian Infrastructure Investment Bank.

Next, forum participants heard a talk by **He Jiankun**, CCICED member, Director of the Institute of Low Carbon Economy at Tsinghua University, and former Executive Vice President of Tsinghua University. He spoke about strengthening think tanks to promote green development. Here are the highlights:

Right now think tanks are a popular idea in China. Universities and research institutes are trying to facilitate think tanks. China's economy is developed, but the challenges we face are numerous. This is an important moment for China to restructure its economy for sustainable development.

In this context China's central authorities want to make sure that decisions are scientific and democratic. That's why they want the involvement of think tanks, which can provide science-based suggestions. They would like to provide new theoretical guidance which is relevant to China, but also practical suggestions.

China's economic growth rate is going down and we are challenged with insufficient growth in the coming years. The constraints on resources and energy are getting more serious, which is why we have to

transform our economic development to have green growth. Some traditional industries that consume a lot of energy suffer from slow growth, for example, coal, cement, and steel face overcapacity. Some companies still expand their capacity, hoping to find a way out. But this creates problems that make our transition more difficult.

China's energy demand will go down. During the 11th FYP energy demand grew by 6% and during the 12th FYP by 4%. During the 13th FYP energy demand will probably grow by 3% or less. In future, solar, wind, and nuclear will enjoy some space. If we can phase out some coal-fired plants there will be some cost. In this context we need to have comprehensive strategic mapping. That's where we need support from think tanks.

Every department, every regional government may focus only on their own jurisdiction while developing the economy. Many of them concentrate only on the urgent problems that they need to solve immediately. That is why some policies that they adopt may seem to be effective now, but may not be so in the future. Some of the decisions may solve regional local problems but may not be good decisions in the broader context. So, think tanks need to come up with recommendations so as to facilitate reasonable policies.

Think tanks are different from ordinary research institutes, especially those in universities which are academic and only want to generate discoveries, inventions, and so on. They want to generate new knowledge and write high quality papers. But think tanks should focus on problem solving – on providing policy recommendations to governments.

There is also need for private, independent think tanks, because they can evaluate the problems we face independently so as to provide reasonable suggestions. They need to have a different perspective. So for us to improve think tanks, it will take a long time.

CCICED should become a good platform connecting China and international think tanks so as to facilitate collaboration among think tanks. For China to achieve sustainable development we need collaboration with other countries. Studying China's problems from a global perspective and studying global ecological problems from a Chinese perspective are what Chinese and international think tanks ought to do – work with each other to find solutions.

CCICED not only provides policy support to the government but we should also make sure our policies have wider impact so that ordinary people buy into our new concepts and ideas. Then there will be consensus and that will facilitate policy implementation.

Noting with regret that the sixth and final presenter, **Zhang Xinsheng**, member of CCICED and President of the International Union for the Conservation of Nature, was unable to attend the forum owing to other commitments, co-chairperson **Liu Shijin** opened the floor to general debate and comments. At this point co-chairperson **Roger Beale** took over as moderator of the session, and offered the following roundup of the discussion so far:

We started off with a certain circularity to the presentations. Arthur Hanson talked about CCICED being a “think tank of think tanks.” Then He Jiankun closed by saying CCICED is a great platform to connect think tanks! I thought that had a beautiful circularity.

A number of speakers mentioned that think tanks are critical to link knowledge about social transformation, the science that drives the need for social transformation and informs transformation, and the economy, because it’s only by getting integration to happen that we can begin to sustain change and make change in advance of crisis.

I would like us to focus on CCICED itself as a form of think tank and on CCICED in relation to other think tanks in China and internationally. And I would ask you whether CCICED should be supported by or contribute to a think tank aimed at green transformation in China.

China’s green transformation would be hollow if it merely transfers problems elsewhere. Let’s discuss this. Where does CCICED and green transformation in China go from here?

General debate and comments

There is some danger in just talking about definitions. CCICED very much can be a hub among think tanks. It can give advice to government, help solve problems, contribute to increasing public knowledge

about green transition. In these networks CCICED can be the hub to link research institutes. Sweden's Stockholm Resilience Centre does not define itself as a think tank, but its concept of "planetary boundaries" contributes to policy makers, governments, and so on. It is a new concept and can be used in different areas. CCICED of course has the natural sciences as the core discipline. But now the social sciences come in, in the form of the humanities, history, and social anthropology.

There is a strong connection between thinking, synthesizing, merging knowledge and disciplines, and then making something happen towards green transition. There are different pathways for different countries.

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We have heard reference to "think tank of think tanks," or "hub." It is not clear what think tank we're talking about in a big and changing world. There are many think tanks in China and internationally. Who are we addressing and who is communicating with us? It would be good to see an organizational map of this, showing the lines and connections. Is this an ambition that we have – to be a think tank? It would be good to have a clear and uniform picture.

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What type of think tank could we have in mind? In my view there are different knowledge bodies, different types of strategic orientations of think tanks – we need new narratives, new civilization models. CCICED is strong because ecological civilization is now shaping a new paradigm. *Meta*-knowledge is necessary. At the *meso* level, we need to translate these concepts into something that is operational, for example for business models or government reforms. And then we need *micro* innovations. These are the three knowledge bodies. CCICED is strong at the *meta* and *meso* levels, but not so strong at the *micro* level, because that requires much more specific and focused think tanks.

In the knowledge system are three paradigm shifts. CCICED can pioneer international knowledge cooperation. Joint knowledge cooperation needs to be much more important as part of the global governance system than before. This would be the first paradigm shift. Joint knowledge creation is not

yet a part of what Germany does internationally, but CCICED has been pioneering this through the task force process for 20 years.

The second shift is transdisciplinary research, such as working with decision makers. CCICED is good at that – at research and practitioners working together.

The third paradigm shift is something that is necessary but that CCICED can't shape – the capability to bring knowledge on social systems, ecological systems, and technical systems and the interaction among them. The economy will have to be built to fit into ecosystems.

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CCICED cannot be everything. It can't be a think tank that is as comprehensive as some others. Indeed it has advantages at the *meta* and *meso* levels, but the *micro* level would make demands on CCICED which would run into interesting and difficult governance arrangements, including with the government of China. There is a question mark about how far you want a body that is owned by China but open to the world to be acting in its own right.

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As an entity to generate knowledge, CCICED has played an important role. If we only relied on internal Chinese organizations, China's progress would be much slower. CCICED has been on the front line in this regard by providing best practices and good advice. Nonetheless, CCICED is now faced with two issues.

First, the uniqueness and peculiarity of its international partners are not as strong as it was before. Now the Council is becoming very Chinese. Our advice sounds "pleasant" to the ears of Chinese government officials.

Second, because of the transparency and openness of CCICED's operations – its reports are available to the public and the media – the Council is constrained in the depth of its research. Instead we should work

in an enclosed environment so that our research would be deeper. If so, our findings could be produced in an internal way, which means we could be more straightforward in our findings to the government.

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President Xi has asked for three kinds of requirements for think tanks to play their role. First, they should be problem-oriented. Second, they should provide services for decision making for government. Third, they should be forward looking, focusing not just on current issues.

We have been meeting this requirement so far. CCICED has provided much good advice to China, on best practices, experiences from other countries, and so on. Also we have had good experience sharing and collaborating to address economic, environmental, and governance issues. The highest leadership in China attaches great importance to our recommendations.

The Council is a platform for different kinds of think tanks to share best practices and introduce them to China. . Over the years the Chief Advisors have selected the topics for research. My point is that they have been doing well to address the issues in China.

Of course, CCICED cannot make recommendations on every issue facing China. We should always focus on strategic global issues in the transformation process, and identify issues that are closely related to the focus of the international community. The past 25 years we have been travelling on this road and CCICED is becoming more influential. The Council's recommendations have good credibility and a good reputation, because the Council always positions itself as an independent third party. Also it's focusing not just on regional issues but on issues about the whole of China and China's connection with the world.

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This point is critical. Is this body actually the China Council for International Cooperation on Environment and Development? Or is it the China Council for International Cooperation on *China's* Environment and Development? That goes to a fundamental question of focus. In the past, the Council probably was very much focused on *China's* environment and development. Some of you are saying that

we should be moving in a more international direction. It would be interesting to hear more perspectives on that.

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What the Council now has going for it is the conceptual construct of ecological civilization. Is it then applied only further to help China implement it? Or is it now a construct linked with the SDGs? How might it be carried internationally?

The word “implementation” is striking. Do think tanks do things? CCICED has an opportunity to go beyond the thinking part – but not to actually *do*. It must work on the mechanisms. Another point is about audience. The focus of the Council was always to advise the highest level of the Chinese government and ministries. It is evident that if we are going to achieve green transformation or ecological civilization, other actors must be involved: the general population, enterprises, and so on.

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This raises a question that Arthur Hanson brought up with his phrase: owned by China, open to the world. If we are the China Council for International Cooperation on Environment and Development, rather than the International Council for *China* on Environment and Development, that then changes the nature of that ownership by China and our relationship with China. And it would cause China to rethink its relationship with us. It runs the risk of us becoming another global negotiation forum.

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Those words were carefully considered. We have a clear audience now, which is the State Council and high levels of government, senior leaders in think tanks, and so on. We don't want to lose that. This is an ongoing discussion we have every year about how much should be done on the outside – which is still about China – from the outside looking in, which is to provide early warning signals and some advice that is not yet cooked, not yet ready for digestion by China. Yes, if we become a negotiating body, we lose our uniqueness.

Here is an example of how we can benefit both the world and China. It took us three years to get SLCPs on the agenda. We know it is important to the international community, but we also know the Chinese are cautious about it. We had an extremely able co-chair on the Chinese side, and by the time we got through that work and showed the co-benefits and joint product between air pollution control and climate change considerations, it was the Chinese side that wrote that report. It wasn't the international side. This was a breakthrough.

By contrast, a UNDP report on SLCPs has been sitting, unfortunately, for a year. So we have been able to come along and point out genuine benefits to China, give an early warning that this is an important topic, but there are also real benefits to addressing it.

That's how we can combine looking at China's needs with "China and the world." It is a balancing act. Some senior Chinese members of CCICED have said:

Look, China knows how to handle its own problems. It has enough knowledge. But there is something we don't do well: we don't understand how we should be functioning in the broader world.

China is saying: we want you to understand us. China's climate change negotiator, Xie Zhenhua, notes that many CCICED graduates are now in positions of authority internationally. It's about connectivity, which is where international cooperation comes about. I think that will change with how we do it. It will be enriched and elevated in certain ways so we can more quickly get at the problems, the questions that are needed. So, the bottom line is this: this is about China – China domestically and China internationally – and it's about us understanding China, whether domestically or internationally.

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Indeed, if our advice will be useful and not a negotiation of the international sort, sometimes it needs to be private. The other point is the uniqueness of advising the State Council, which enables us to do that bridging between the scientific knowledge and the economy.

Many connections come out of this work. For example, the Chinese co-chair of the task force on green finance reform is definitely having direct talks with people at the top related to that work. We are not part of that – “we” being the international side – but that’s fine. We are being allowed into highly influential networks that already exist. These networks will be better informed because of our work, and will know that it is consistent with the international ideas that are out there. Then these ideas will be given Chinese characteristics.

A lot more of that goes on behind the scenes. Although this is only the second time we have seen Vice Premier Zhang Gaoli this year, much more interaction goes on with his office that we don’t see. Speeches come out that bring in CCICED ideas. There is a continuous process of taking the pulse of what the State Council and the Vice Premier’s office, or the Premier’s office, are discussing and thinking. Those tight connections rise above departmental links such as those with MEP. It means that the work of a think tank, such as we envisage, has to be nimble and responsive to immediate needs.

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There are three different options for Council focus:

First, some years ago, it was domestic environmental policies in China, then domestic sustainability challenges.

Second, during recent years we began looking at the international dimensions of China’s environmental and sustainability strategies – value chains, trade, the impact of China internationally. We should make this second element stronger, because China is a driver of global change. For example, when it comes to research and development investment by China, China already equals Japan and the EU, and soon will equal the United States. What China does in the field of knowledge creation is important for the rest of the world.

Third, the Council might become a platform for global sustainability debates. This is different from the second option because here the focus would be: there are global dynamics in the arena of sustainability, and CCICED brings the Asian and African experience. It becomes a global platform. I would not argue against the third option, but strongly in favor of combining the first two.

The Vice Minister seems to suggest that this third focus – global sustainability debates and platforms – from his perspective might be something like the outreach activities of CCICED, presenting the Council and its knowledge internationally and globally.

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Very interesting, but it does again raise some of those governance relationship issues. If CCICED is projecting internationally, it is projecting through a Chinese lens or in a totally independent way? That raises some subtle and interesting questions.

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China is changing quickly and also the demands are changing quickly. We heard already how CCICED has strength at the *macro*, *meta*, and *meso* levels. Interestingly, it seems that China at the *macro* level is at the point where it has this whole vision all clearly spelled out: ecological civilization and reform plans. It almost seems like they are ahead of us.

Perhaps there are ways that CCICED can draw on its strong network of individuals with excellent knowledge and amazing goodwill and a willingness to support China in this transition to quickly respond to questions that emerge in that process. That is possible, considering the Council's track record. But it does require some changes, perhaps a stronger and more permanent team that knows who is who, and whom to call, and can integrate what comes back, translate it quickly, and do some quality control before it goes to those very important people.

There has been talk about CCICED's independence. Clearly the Council would benefit from some increased level of independence. It seems overly connected to MEP, and that undermines its authority with other ministries and other players. But at the same time it's not easy to let that go, because it has a clear parent, and that gives it safety and ownership. But there are possibilities for that, especially considering that ecological civilization is becoming a nationwide issue. It's an issue not just for MEP. For example, that reform plan issued recently was developed by NDRC with inputs from MEP and from

other ministries too. Clearly China aims for this to be an economy-wide effort. Essentially the ingredients are there to become more independent but that transition needs to be thought out carefully.

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One of our roles is to understand China. Each of us who has been on a task force or has been a Council member knows that it takes a long time to understand Chinese characteristics. How can we frame things that make sense to us and are sensible in China, and sensible in terms of China's relationships with the external world? China's connection with the world is important. Its green transformation would be hollow if it simply exported a brown transformation elsewhere.

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This has been a challenging year on the task force, because all of us on the international team had little experience of China. We didn't understand Chinese law so we had to rely on the Chinese team. Our approach was to ask the Chinese team what are the important issues. They gave us a list of topics and we discussed those. The report incorporating our proposals was written essentially by the Chinese with help from us. Our Chinese members must have been well connected because the topics that we chose were the topics that had been picked up in the FYP. The work we did during the year probably did help to contribute.

For an environmental regulator, it's always difficult to know where to devote your resources. The key thing is to pick important problems and fix them. In picking the problems, that's where the knowledge comes in. It is important to describe what the problems are and also to know about the options. The solutions might be a combination of instruments or approaches. It doesn't matter what is the label of the organization, for example whether it is described as a think tank. The crucial thing is to decide what it should do, and fixing things is essential.

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Of course CCICED's focus should be on China. We have concentrated a lot on environmental protection, but until now more on sustainable development, including green development. But now, China's

economy is slowing down, so we pay attention to growth as well as environmental protection. We should bring into full play the combination of strengths between international and Chinese experts. Our international members from industry or academia have big horizons and a broad outlook, plus they bring team support. They have their own think tanks to support them, and by means of the CCICED platform they have a good understanding of China. A combination of international perspective plus a good understanding of the Chinese context can produce relevant proposals about China. That makes the China Council unique.

CCICED should not position itself to be a traditional think tank. It's a think tank of think tanks, or a link or platform among think tanks. That kind of positioning is more appropriate. We should focus on some of the issues but should leverage other think tanks and their strengths.

We don't always have to come to consensus on big issues concerning environment and development in China, because it's so complex and controversial. Compulsory consensus building is not necessarily a good thing, because it will eradicate the uniqueness of each member. CCICED reports could be collective, or the Council could even issue individual reports or reports from a few members. So there could be different types of reports, and they would be deeper and more meaningful for China.

We tend to submit our proposals to the top leadership for their review, but actually the decision-making process is complicated. The fact that proposals are reviewed by the leadership does not mean they will be translated into action. They need the support and implementation of important ministries before they can become reality. Many similar reports are submitted to the State Council, and likely ours might be put on the shelf with only one circle from the Vice Premier.

We should help the leaders make decisions, but another key role for CCICED is to shape public opinion with our many good ideas. Could we find a way to share our findings with the public and the media? On top of closed-door meetings such as this conference we should also have open-door sessions where the public can participate.

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Think tanks should also have a kind of green transition. We talk about fundamental or application research, industrialization, and commercialization – these three things are coming together. The boundaries among them are blurred. The issues faced by businesses are the most current topics for research. So how should we position ourselves as a think tank? We used to do a lot of research on policy, but now that is going nowhere. There are no breakthroughs for important theoretical issues.

On green transition in China we have made a lot of progress, primarily with our research and meetings, so that society and government now pay more attention to green development and environmental protection. Support for ecological civilization and green development is already high, so what is the problem? For one thing, we still have not made major breakthroughs on important issues. As well, we do not have a good implementation mechanism which means that many good ideas are not yet grounded.

Furthermore, the players used to be only governments and environmental protection agencies, now they include the public and businesses too. Progress has been made on cap-and-trade, to internalize many external issues. From that perspective we need to achieve breakthroughs in theory and also need to have good implementation of ecological capital measurement. Without good measurement, all these things will remain in paper. We did some measurement for green GDP, but the result is not satisfactory. Now we will identify air, vegetation, and soil values, and because we have the internet we can use quantitative indicators. How to calculate the value? We do that by means of trading, that is, by marketplace transactions.

We try to influence the top leaders by sending reports. But they are busy. Although you may spend a lot of time writing this report, how much time does the leader devote to reading it? The Council has come up with many good suggestions, proposals. If we invite hundreds or even thousands of people to hear the announcement of our results, the ultimate outcome would be good, because the leaders pay a lot of attention to public opinion. So CCICED may want to change the way it convenes meetings.

In China we used to say that only when a think tank has done something valuable is it useful. The key is whether you can come up with something influential that inspires people.

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Getting back to the international dimension, we should not make any fundamental change that might hurt the well-established influence of CCICED or even put it at risk. At the same time, the world changes and China changes, and there will be more initiatives on the environmental side that will lead the world and new solutions that other countries would like to import from China. How can we balance this to have more of the international dimension in our work? That could be done with the task forces and the special policy studies. They could be required to include two elements in their reports: explain how all this information will be communicated, within China and to the rest of the world; and address the international relevance of the findings. That way you can keep the nature of the Council's work as it is today, but put more weight on the international dimension simply by highlighting that in the report.

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Increasingly, environment and development issues are a priority for our leadership. The *Environmental Protection Law* specifically mentions this. In the past, the act said that environmental issues should be supporting economic development, but now we are reversing the order. We say now that economic development should serve the interests of ecology and the environment.

In the past, environmental protection bureaus found it difficult to attract a mayor to attend an event. But now the mayors and party secretaries of different cities take these issues seriously. Now, China's environment minister also takes part in economic and financial reform task forces.

The role the Council can play under MEP will be big in the new context of China's economic and social development. In China there are not many organizations directly under the State Council. CCICED is under MEP, and with the Vice Premier as chairperson, these arrangements are good. In addition, the key role of CCICED is to provide recommendations to the top leadership.

Also it may inspire ministries to realize that the number of international and Chinese Council members is the same. Many Chinese Council members work in ministries to solve environmental problems, so the discussions in CCICED also serve to urge government departments to act. The Council's influence is not just over the central government, but it is broader. Every year we have limited funds for research, but they are widely applied in a lot of institutions. The new theories from CCICED and the international

experiences have been spread across China. So we are not just advising the leadership. We are having an influence at different sectors of China.

Summary by forum co-chairpersons

Roger Beale wrapped up with these observations:

The discussion has emphasized our role as a platform of think tanks. It has reminded us that our relationship is owned by China, open to the world, and opening China to the world, but through China and through MEP to the broader community. As we engage with other countries that might learn from what China is doing, and what we are helping China to do, one option might be to include some task force or Secretariat members from those countries, so that they have a learning and sharing experience as part of looking at China's problems and solutions. That might involve Council members or finding people to serve on task forces. We have links to enable us to do that.

Maybe, for our Chinese colleagues, this is a form of second- or third-track diplomacy in that we have to understand China better in order to help China. We are then in a much better position to explain China to our home audiences. All of us are pretty well connected at home. We are here because we have been chosen by our governments. So that is worth thinking about from the perspective of the Chinese government. This is an important part of its own soft diplomacy, helping the world to understand China.

Launch of China's Green Growth Roadmap in the 13th Five-Year Period

Roger Beale continued as moderator for this special event. He introduced **Yvo De Boer**, Director General of the Global Green Growth Institute, and **Xia Guang**, Director General of MEP's Policy Research Center for Environment and Economy. The forum heard first from **Yvo De Boer**:

China is the world's second largest economy but it has grown on the basis of fossil fuels. This model has made China the largest emitter of GHG and resulted in a great deal of environmental degradation. China's policy aim is not just to limit climate change but to transform the development model to one

more driven by innovation. The government intends to strengthen prevention control of environmental risks, and at the same time improve environmental public services at the central and local levels. These objectives closely match those of my institute, in that they support developing countries and emerging economies that want technological and policy advice on how to pursue sustainable growth.

In 2014 we cooperated with the Policy Research Center for Environment and Economy on a project called *Scoping Green Growth Opportunities in China*. This study identified problems but also opportunities and challenges in relation to China's green growth. It focused mainly on two dimensions, domestic regions and industrial sectors. The report has been taken as a reference by the Vice Minister of MEP in his proposals to the National People's Congress in March 2015. So our recommendations are finding their way into policy.

In 2015 we are working on a green growth roadmap for China's 13th FYP. The research aims to develop a systematic strategy and pathway for promoting China's green growth and to propose a roadmap for this growth during the 13th FYP period. The report refers to CCICED and provides support for the green growth transformation and policy making that is so crucial to China's future.

Then **Xia Guang** made these remarks:

We all know that resource and ecology related problems in China are serious. We have two ways to solve these. One way is to slow our development, to reduce economic activity so as to recover our environment. Or, we change the way we develop. We can only choose the second method. Why? Because China's economy is at a stage where further development is needed. We can only choose green development as the solution. The central government mentioned the 13th FYP proposal which clearly outlined that we will continue to develop. Green development is the overall direction already decided.

How can we realize green development? There are three levels:

- conceptual development, that is, directions and ideas. We have already finished this job.
- top-line design. We want a structural roadmap to point out directions and tasks for us.
- implementation. We should take actions from the central and local governments.

Today by launching this report we have accomplished the first job, which is to transit from a conceptual map to a roadmap. We still have not had the implementation strategy. But a roadmap is important. It is a precondition for implementation.

Then **Xia Guang** introduced **Yu Hai**, Director and Senior Research Fellow, Policy Research Center for Environment and Economy, who shared the main findings from the report:

First, while China can achieve its objectives with regard to most of the relative green growth indicators, this does not mean that relative green growth will improve significantly during the 13th FYP versus that of other developing economies. We can achieve our own objectives, but relative to developed economies we are still at a low development stage.

Second, to date no systematic indicators and targets for green growth have been created in China. It is difficult to judge China's overall green growth because different indicators perform differently and expressions of green growth may vary across regions. There are huge variations among different indicators. And green growth levels vary from region to region, so it's difficult to have a comprehensive idea nationwide.

Third, China is experiencing enormous challenges and pressures to achieve progress during the 13th FYP. Overall quality improvement is our major weakness.

Here is the basic pathway of China's green growth. First, we need to adjust the basic structure of the macro-economy and industries. Then, we must green the entire economic and industrial chain, from production to distribution to consumption to supply. We need to drive green growth by institutional innovation instead of relying on production factors. We have to focus on scientific and technical advancement, because we used to rely on resource investment to drive our economy. That has to be changed. We have identified green growth priorities and paths in the 13th FYP – overall economic structural adjustment followed by primary, secondary, and tertiary industry, then the movement of production factors among different economies. And we need to do all this by region.

Too much intervention from government does not achieve a lot. During the 13th FYP, instead of becoming directly involved in promoting the green growth of industry and enterprise, the Chinese government should *enable* green growth by creating a better environment for innovation. Here are some specific measures to ensure that green growth can be achieved:

- Include in the 13th FYP the indicators and targets of green growth for governments at all levels.
- Improve the market mechanism for green growth.
- Set up a financial system for green growth.
- Reform the taxation system to encourage green growth.
- Set up a global green value chain and trade policy framework.
- Strengthen the environmental enforcement mechanism for green growth.
- Strengthen the system of scientific and technological innovation for green growth.
- Build human capital and information capability for green growth.
- Perfect policies that support green urbanization.
- Improve policies for new energy and environmental industries.

Item 14. Open Forum 3: Green Finance and G20

This forum was co-chaired by **Chen Yulu**, former President of Renmin University of China and now Deputy Governor of the People's Bank of China, as well as co-chairperson of CCICED's Task Force on Green Finance Reform and Green Transformation, and by **Achim Steiner**, Executive Director of UNEP and CCICED Acting International Executive Vice Chairperson. In their introductions they set out the framework for the discussion.

Chen Yulu noted once again that China will host the G20 annual summit in 2016 and that green finance will be on the agenda. He called on forum participants to consider what contribution the summit can present to the development of green finance and what opportunities may arise from that meeting.

Achim Steiner then made these points:

Let me provide a broader framework to what is happening internationally. Two years ago I initiated a study project called The Inquiry into the Design of a Sustainable Financial System, which grew out of work done by others including the China Council that had been maturing for years. It tries to bring an economic perspective to what are either scientific or biophysical phenomena. To put it at its simplest, adding an economic perspective or introducing economic literacy to the environmental dimension of sustainable development has been a critical part of a long conversation. In some parts we already saw emerging (for instance when Lord Stern produced his ground breaking report on the costs of inaction on climate change) it was a translation of changed phenomenon in the atmosphere but was captured in economic terms and consequences.

For us in UNEP, we realized seven or eight years ago that the issue is not just climate change but also what was referred to as "the ecosystem" or the natural capital. We still struggle today to understand that the issue is not only technology, pollution, and climate change, but it is a functioning, healthy environment. How do you relate that in economic terms so that when cabinets have to make national planning decisions about locations and choices, the invisibility of the value of a well-functioning environment is not lost in the analysis?

For UNEP this journey began through looking at the economics of ecosystems and biodiversity, trying to understand how to value that which in our systems of national accounting traditionally was valued at zero – because it was not economically measured. This explains 100 years of modern industrialization and development, where the loss of natural capital was of no consequence to a country's wealth, because the system of national accounting never captured it.

It was in the context of the financial crisis that we also began looking at the more macro policy context. Seeing the thousands of billions of dollars being deployed in stabilizing our financial system created a strong incentive to look at how some of this stimulus package could begin to invest in the economy of tomorrow. But that is an oversimplified way of putting it. For instance, we could invest in the transition from fossil fuels to renewable energy, from urban infrastructure that is dominated by traditional planning parameters to introducing a resource efficiency dimension, looking at mobility not only in terms of increasing the production of vehicles, but as China so boldly demonstrated, investing in public infrastructure, the expansion in railways and urban mobility systems.

But all of this in the context of the broader transition toward the green economy, but also in the particular moment of having to address an economic transformation in the context of climate change that is unprecedented in human history. The next 50 years will require a reinventing of our economies in terms of technologies and management systems that is without precedent. The problem is not that the world doesn't have sufficient finance. The financial assets in our system are extraordinarily large. The banking system worldwide has 135 trillion. Overall there is probably well over 400 trillion dollars in our system. However as we saw in the financial crisis, it is increasingly not aligned with the real economy. Obviously private finance is not public finance. The first question is: can public finance and regulatory measures help us incentivize a greater flow of investment into a green or low-carbon economy?

This led UNEP to commission this enquiry because we were interested in looking at how countries have used central banks and financial regulatory authorities to begin to leverage both public finance and regulatory instruments to incentivize or attract a greater amount of finance from financial and capital markets.

What we found is interesting. In some ways a quiet revolution is already underway across the world, because in many emerging and developing economies, the need to align finance with development

priorities and scaled-up investments is much more immediate. In the traditional financial capitals of the world, central banks are focused on monetary stability. In emerging economies, the ability to leverage financial capital is a more dramatic and immediate need.

Therefore, the innovations we found – in China, Africa, South Africa, Kenya, Brazil, Indonesia – were revealing. In Bangladesh the central bank governor put a lot of attention on a developmental central bank approach. In the orthodoxy of central bank policy this would be viewed with skepticism. We have seen other interesting trends. The governor of the Bank of England recently commissioned a prudential review in terms of the implications of climate change and global warming for the insurance system. And we have seen also in the Financial Stability Board a first step toward trying to understand the longer term implications of climate change on monetary stability. These are initial steps but they are indicative of a realization that our financial system is not divorced from the real world.

Indeed climate change is becoming a lens through which we are sharpening our focus and our understanding. What would be the implications for an insurance or financial system of the kind of changes we now anticipate may be part of our future? The insurance sector has for many years through its risk insurance function looked at issues like climate change and natural hazards, also functionality of ecosystems, pollution impacts, and at financial insurance and prudential perspective. But insurance companies are also major managers of financial assets.

We find ourselves in this extraordinary moment where China's own search, last year through the People's Bank of China, triggered a lot of attention. The Inquiry was fortunate to work with the People's Bank to understand how systematically you assessed the green finance needs and also the opportunities for action. And now we have the G20 presidency. A G20 process does not change the world in itself, but it is a significant signal to the world of finance that this issue is now being brought in the finance track of G20.

This is the beginning of a conversation that has not happened in the last 50 to 100 years when it comes to financial and monetary policy and these broader sustainability challenges. Therein lies the enormous promise of a new momentum and a new level of attention for the role of financial and capital markets in the context of our societies. The question is: will regulation in an intelligent and smart way help scale up green finance or will it always remain a niche market?

With **Chen Yulu** serving as moderator, the opening presentation was delivered by **Andrew Steer**, Council member, President and Chief Executive Officer of the World Resources Institute, and co-chairperson of the Task Force on Green Finance Reform and Green Transformation. His talk aimed to clarify the meaning of “green finance.” Here are the key points he made:

Most people think that green finance is finding money to solve an environmental problem. But actually it is much bigger. One of the most important contributions that China could make to the G20 is to clarify the issue of green finance. In the next 15 years the world will invest US\$90 trillion in infrastructure – China alone US\$25 trillion. Green finance asks: where will that money go? To a brown future or a greener future?

In order to think that through one has to ask: what is the financial sector? It is households and corporations that save money. They put that money in the financial system, which then decides where to put it. Over here to a brown future? Or over here to a green future?

Of course it’s more complicated than that. In fact the financial system includes banks (in China, banks dominate) but also bond markets, equities markets, insurance, pensions. We have to look at all of them and ask: where does the money go? What color will the future be?

Traditionally, if you asked that question, professors would say, that is none of your business. As a financial person – a financial regulator, central bank governor, manager of a bank – your job is simply to assess what rate of return you will get and assess risks. You put the money in the right kind of balance, a portfolio that gets the best return for whatever risk profile you have an appetite for.

But that has changed. There is a revolution going on. Even central bank governors are saying: actually we do have a role to play. Our job is to assess risk, but we are not very good at assessing environmental risk, which is important. Then the question is: why isn’t it happening? Why isn’t there enough money for green projects? There are two reasons.

First, the demand side. There simply are not enough bankable projects. A lot of people say there is not enough money for environmental projects. In fact, usually there are not enough decent bankable projects that are coming to banks and saying: please invest in me. The starting point then is good environmental policies and incentives outside the financial system that encourage factory owners, city designers, agriculturalists and so on to invest in a different way. Here in CCICED we have been focusing mainly on good environmental policies. At one level they have nothing to do with the financial sector. They are simply policies that encourage investors to do the right thing, and not pollute. So that's the demand side.

Then, the supply side. That is where green financing engineering comes in. There are two reasons why the financial sector (even if there is a demand for green finance) doesn't provide it. One reason is that they are not very good at environmental issues. They don't have expertise for measuring environmental risk or assessing it, nor do they have incentives to do so. Another reason is they are inherently conservative. Financial markets prefer to put money where they put it before – for example, in coal power plants. They don't inherently like new and risky things, such as are required if we are to move to a green future.

How do we address these two issues? This comes to the kind of thing China leads in, which is thinking through financial regulations that will encourage green finance to take place. First of all, regulators are unfamiliar with environmental issues. Certain policies can be put in place, for example, you force banks to understand environmental risk and to disclose those risks. The second thing you can do is: you can say to the financial sector, banks for example, that if you lend into something that is an environmental disaster, you are accountable for that. That's why the Chinese government is considering mandatory liability insurance. That really sharpens the mind of a banker. Third thing you can do, long term, is build capacity in banks. There is no short cut to this. Every serious bank needs to know how to evaluate environmental risk. There is no alternative to that. A ten-year process at least, to invest and require banks to build that capacity for environmental assessment.

One thing you can do is set targets for green finance. India and China do it. You instruct banks or other pools of money that a certain share of their lending will go to green investment. It's risky because in many countries in the past, it takes away from bankers the right to be bankers and to assess risk and return.

The third thing you can do is provide incentives, such as subsidies for green finance. You can do that through the discounting mechanism. Bangladesh says “if you are willing to lend to green investments, I will let you borrow from the central bank at a lower rate than if you are lending to brown investments.” This is fertile territory.

Another thing you can do is create new instruments, for example, green bonds. China is doing precisely that. It requires a regulatory environment that enables you to do it. It is creating instruments and encouraging them. And you can even subsidize them.

The final thing you can do is what UNEP calls the public balance sheet. You can form funds or a green bank. And in our task force we looked at the benefits of a green bank versus a green bond. In China, a green fund we think makes more sense, because a green fund can be very flexible. It can invest equity, and in China’s context that is helpful since it is a banking dominated culture. The equity then can help bring in debt to follow. A green fund can provide all kinds of risk management tools such as guarantees and tiered lending, so it makes it more likely others will come in and follow. Of course these funds can come from many places: public funding, central banks’ balance sheets, international multilateral banks. Those are some of the instruments that are available when we talk about the green financial revolution.

Now we come to the G20. The most important thing it could do under China’s presidency is explain what green finance is and get in the minds of regulators, central bank governors, ministers of finance the fact that actually the job of a financial system is to assess risks and allocate funds. It’s not assessing risk very well because it is not tackling an important risk, which is environmental risk. The People’s Bank of China and the Bank of England will co-chair a process. The governor of the bank of England, Mark Carney, has been saying that as bankers we have to be serious about risk, including environmental risk.

What are some of the particular topics for the G20 meeting?

One would be global standards on disclosure. This would be hugely helpful if the financial system would be a part of assessing environmental data and risks. This would shift the needle toward a green future substantially.

A second topic would be environmental stress tests. We didn't know how to assess the risks of financial institutions 20 years ago. Then we invented stress tests – modelling frameworks where you stress the balance sheet. Let's imagine interest rates double and you enter a recession. What would that do to your balance sheet? Why don't we do the same for environmental risks? Suppose we do head for a warmer world under climate change. Suppose air pollution gets worse? What will actually happen? What would happen to this bank if it turned out that because of the price on carbon we have a lot of stranded assets? That would be a stress test. A sophisticated stress test looks at several risks that all come together.

A third suggestion: we could have global standards for green bonds. At the moment this market is growing rapidly, but the definition of a green bond is still not agreed.

The second presenter was **Ayumi Konishi**, Director General of the East Asian Department of the Asian Development Bank. Among other topics, he spoke about his bank's green agenda in China. Here is an outline of his presentation:

Many people use this term "green finance" without defining it. In the Asian Development Bank we define green financing as investments that promote transitions to sustainable infrastructure, sustain natural resources and maintain ecosystem integrity, strengthen environmental governance and management capacities, and foster climate change mitigation and adaptation.

The Asian Development Bank committed to double its climate change financing from US\$3 billion to US\$6 billion a year to contribute to the international community's target to mobilize US\$100 billion a year by 2020.

When we look at our bank's actual performance, our target for green investment in 2010-2012 was only about 25% of total investment, but in reality it came in at 43%. In other words we over-performed. Similarly during 2014-2016 we are also over-performing. What is really happening is that our bank's investment opportunities are becoming greener. This year we issued \$500 million of green bonds.

We do not need so-called green finance to have green investment. Those things are not necessarily related. It's important for us to make the distinction. There are two aspects in green finance. One is the

effort to make all investment activities greener. Another is securing financial resources for “green investment” in a narrower sense. This narrower sense means that the demand for green finance can involve such things as sustainable energy, environmental remediation, green infrastructure, industrial pollution control, and energy and resources efficiency.

China’s green financing needs during 2014-2020 are estimated at US\$5 trillion. When I first saw this number, I struggled. It is a big number, but then I realized it is very small when we think about China’s entire investment: US\$10 trillion a year, now at 6.5% growth. What we really mean over this period is about US\$40 trillion. Are we really talking about making this whole investment greener rather than just the US\$5 trillion?

The key challenges in securing green financing are these:

- markets fail to recognize green development, demand-side issues;
- high up-front capital costs and limited availability of long-term green financing;
- local financial institutions lack capacity;
- and the lack of appropriate regulatory and policy infrastructure.

The Asian Development Bank was fortunate to be invited by the NDRC in 2013 to make recommendations for the 13th FYP. Last year we came up with a report with eight sets of recommendations. Two of them are related to sustainability, climate change, and green financing.

First, China must reform economic incentives and change growth patterns. Everybody has been repeating this. Resources prices and pollution charges must change to make green investment profitable. Also we should expedite natural resources and property taxes, and introduce a green taxation system.

Second, China should reform its fiscal system. Among other measures, it must address the fiscal imbalance between central and local governments and recycle new revenue from taxes or fees to local governments to encourage their investments in the environment.

In terms of what we are doing in China, the focus is on four main areas: conventional loans and investments, knowledge generation and sharing, leveraging more resources to develop more investment, and innovation – which is the key as several have emphasized. Last year our bank signed two

memoranda of understanding, one on clean air, water, and soil, another on climate change activities. As well we are making significant investments in the Jing-Jin-Ji and Shanghai areas on pollution remediation and other problems.

People often ask us: what will we do with the Asian Infrastructure Investment Bank? We look forward to working with this new financial institution, but at the end of the day the development financing needs of the whole world is huge. We want these new institutions to be green. The Infrastructure Bank has said it will be “lean, clean, and green.” Now we are creating some projects to be co-financed with them. We think that the lessons our bank has learned can be useful to this and other new development banks. Also, we will be more than happy to share our experience and knowledge to help Chinese institutions trying to go overseas to become greener.

Regardless what we call it, green bank or not, we are really talking about the need for the financial sector to become greener. Do you need to create another specialized institution? Probably the answer is no. But banks will need to have more ability to access green investment opportunities. A green bank as such may not necessarily be in order.

Let’s face it. China’s financial sector itself is still not well developed. It has to go through far more liberalization and innovation. The banking sector dominating the financial sector is not the healthiest thing. Meanwhile the bond market, insurance, equity markets, all need to further develop. We hope that China’s green reform will be accompanied by the reform of the financial sector generally.

We think that green bonds have good prospects, particularly with the growing number of middle and upper middle class people, as they try to invest in something. Or China can think about introducing the “crowd green financing” to bring in more funds from the general public. We know that Alibaba and such institutions have been generating a lot of money.

Finally, the Clean Development Mechanism fund, which because of problems with the mechanism now temporarily is given the role as the PPP centre of China. We hope China’s experiment with emissions trading mechanisms – so far a pilot in 10 cities – will become national. If we can link that to similar initiatives in Korea and Japan to make an East Asia regional emissions trading mechanism, I hope we can link that also to the carbon trading mechanism. Perhaps China can take the lead on this.

John Forgách, member of the China Council and Chairman of the Board of ForestRE Holdings, shared his experiences as a green investment banker:

I created the first green bank in 1996 in Brazil. I worked with all the multilateral groups on various projects. It was an interesting but frustrating experience, because the markets were not ready. Without finance there is no business, no growth, and no development. I just want to caution about expectations on green labels. Finance is finance. The fact it is green makes no difference. In fact the US\$40 billion of green bonds issued in 2014 are priced in the market at the same price as non-green bonds.

Let's talk about the negative aspects of green labels. Green is expensive. When you issue a green bond under the UK initiatives you need two certifications. Certifiers are expensive. You also need to publish and keep an eye on the whole life of the bond, how the money has been spent, and report back to the market about it. But that too is very expensive, not only because you need to pay the certifiers, the auditors, but also because you are distracting management. And management instead of keeping its eye on producing positive cash flow is responding to auditors, to commissions, to biodiversity boards or green boards. Bankers don't like it when there is a product competing at par in the market that costs more to manage. That is one of the reasons normal bankers don't like green products.

Another bad aspect is that the failure rate on green products is huge. The history behind 30 years of green products is bad. The pilot program for the protection of the Amazon forest was a complete failure. They deployed less than a quarter of the fund that was allocated and they dispersed only 10% of the fund, and most of that disbursement was lost. The two big funds created by Norway's government for protection of tropical forests are not successful, in Brazil and in Indonesia. The Clean Development Mechanism program under Kyoto is a complete deception. The big carbon pilot funds of the World Bank, the prototype, didn't work. The carbon markets failed in Europe and in the USA. My own company ForestRE was created to transact on carbon contracts on forests. Failed completely. So, the track record on green business is not good, which scares bankers away.

The last bad element in the green market is that it's quite restricted. US\$5 trillion is peanuts compared with what is in the financial markets. We have over US\$130 trillion blocked today. If you take the analogy

of a river, we have a big dam right now, because bankers and society are scared by disturbances in the market and by all the new technologies. So there is a barrage, a dam. We have no money. There are negative interest rates on bonds.

We have B companies which are growing fast in the market. They produce soft dividends such as “do good” stuff, but also cash. They are attracting a lot of capital. Look at B corporations, instead of green companies.

There is strong public support. We get a lot of demand from the bottom up. Young people demand a different planet than the one we have. They don't like our values. In my four companies I have two board positions for people aged under 20. They really disturb, because they don't want what we are proposing. This is the market that the green products will go towards, these younger people who don't want to smoke, don't want cars, want better public transportation, want healthier conditions for their children, don't like the way we have polluted the planet. That is the market we are looking at. That means that when green bonds are being issued, bankers are already looking at this expanded market. The people who are buying these new bonds are not the usual buyers. They are new elements in the insurance companies and pension funds. It's a new public. That's the big interest for the green market.

Some aspects bother me about green labels in terms of management. There is a certain arrogance about green bankers. Because they are doing more, spending more, certifying, looking at other credentials, they expect returns: recognition, premiums for their products, more favoured treatment by multilateral institutions, UN agencies and so on. Among regular bankers, for example with Goldman Sachs, there is tremendous dislike for these people. But the market will continue working.

I have some advice as a practitioner. The banking world is changing fast, like so much else. After the 2008 crisis, the big banks are completely tied up with regulation. They cannot get good talent, because they cannot pay the bonuses that hedge fund managers and brokerage offices and other institutions are paying. So what you are having today is a shift from big banking institutions to smaller operators. I call them boutiques.

Some of the boutiques are bigger than the banks. Goldman Sachs is a boutique. You have others: FINEX, the big fund managers. These are the ones making the change in the market. So it would be a mistake to

create a green bank. What you need to create in China is a fund of funds. You will have a soil, water, forestry, climate emissions funds, and so on – different funds under the big fund.

All this should be coordinated by a central agency specializing in the green subject, and governed by a banking commission, also specializing in the subject. It should have international and domestic people. These funds will be accessible as capital or bonds to financial operators in the market. There should be a dozen financial operators in the China market: boutiques, even Goldman Sachs, HSBC, different hedge fund managers, FINEX from London. These people basically help disseminate, permeate the financial system. Why? Because the big commercial banks love this stuff. It is fee-generating business. These funds need to be domiciled, cleared, and administered. So they create a tremendous amount of fee business for the banks. There is no risk to that. This is a captive fund which will generate fee income with no risk.

Which means that you create complementarity in the market. But, if you create a green bank, then you have competition in the market. You will create bureaucracy, corruption, all kinds of problems. It didn't work in Europe, Brazil, or the USA. We already have initiatives in China looking for this regulated world where we can domicile financial products inside commercial banks.

Are we ready for this? No, we are not ready. The Chinese banking system is medieval. Credit is not analyzed in terms of risk or project risk. It is analyzed in terms of whose friend the President is, what the protection is, what kind of godfather he has in the market. That's how credit is allocated in China. That means we have to build capacity. Universities in China must dedicate efforts to build capacity. China has decided to launch an ecological civilization – but there can be no civilization without education.

Universities must be revamped. Teachers must be incentivized to produce useful programs to address this. The whole world wants to see China succeed in this endeavor. There are enough accidents over the past 30 years showing us what not to do. China should at least review this track record and try to do better. But there is no going back. Young consumers do not accept business as usual. It can be done, it should be done, and we know how to do it. So please do it the right way.

In response to that presentation, forum co-chairperson **Achim Steiner** offered these observations:

I don't quite share your description of the reality. My green portfolio continuously outperforms the main Dow Jones sustainability index portfolio, the mainstream. So the first thing is: green financial investment, whatever the worth of the label, is not that unsuccessful, and certainly no worse than the main market. The fact that there are failures, shakeouts in the industry is normal economics and banking.

Also I challenge your strong reference point, a Transatlantic, Anglo-Saxon dominated world financial system. Is Goldman Sachs to be the defining reference point for what happens in finance in the future? Young generations say that what Goldman Sachs and so on have given us in the past 30 years as the "law of physics" of how financial systems have to work has cost us a lot.

Regulation can change that. For example, we have had to listen for 50 years to those who govern how pension funds are managed by law excluding social and environmental considerations from the obligation of a fund manager to take those into account. Only last month the US Department of Labor actually issued a new instruction saying that in future it is not illegal and you will not be sued if as a pension fund manager you do factor social and environmental risks into the management of a pension portfolio.

If China or the central bank of Bangladesh says: my foreign exchange reserves in future will be invested in green bonds, because I want to use my balance sheet to leverage that market. There is a regulatory dimension to this that can go into bureaucracy, or it can try to emulate a market and do it worse. That is where the work of the People's Bank of China and others is going to be interesting. Is green just a fad? The very people you invoke, the young people, they actually want the green fund, and that's where the market is struggling. The problem is, however, young people don't have the money.

Daniel Calleja, Director General of the European Commission's Directorate General for Environment, spoke about the EU's agenda on financing for environmental sustainability:

We are not starting from scratch. A wealth of reports exist, for example, the UNEP Inquiry report and the paper prepared by CCICED for this AGM on Green Finance Reform and Green Transformation. There are huge investment needs to meet environmental objectives, both in China and the EU. The message from China's green finance task force is clear: in the coming five years, China will need to invest at least

US\$320 billion per year in green sectors in order to meet its environmental targets. Fiscal resources can cover no more than 15% of these investments. This means that the financial system will need to channel and incentivize private capital into the green sectors. It is promising to see that developing a green finance system is said to be an integral part of the 13th FYP.

China's recent decision to make green finance a top priority when it takes the G20 chair next year is welcome, because advancing the green finance agenda requires scaling up international cooperation, and the G20 can be a great platform for doing that.

The EU is facing a similar situation. We have gone through the worst economic crisis since World War II and we have a gap in investment estimated at EUR500 billion. This is why the main priority in the EU is to reactivate investment.

The first initiative this year is the EU fund for strategic investment. We aim to mobilize at least EUR315 billion in the coming three years with a strong focus on infrastructure and environmental projects. It is not necessarily a green fund. There will be only EUR21 billion of public spending. This will be topped up with private investment on a leverage factor of 15, so that for each euro the public invests we expect there will be 15 euros coming from the private sector. We already have the initial projects and we believe this is a realistic approach. We are pleased that China is also interested in participating.

The Capital Markets Union Action Plan is a plan to diversify the funding sources for Europe's businesses and long-term projects, to ensure that the capital flows freely along the 28 member states of the EU. We want to create the right conditions to enable long-term and infrastructure investments, and harness finance to deliver environmental sustainability. We are going to look into the need for EU green launch standards, in other words we support start-ups, small enterprises, young people who would like to start projects in the green economy, who need venture financing, "business angels," and more innovative financing.

Investors need information on environmental, social, and governance impacts. An important legal instrument is the EU Directive on the Disclosure of Non-Financial and Diversity Information. It addresses larger companies in the EU. This is a new instrument that member states will have to put in place at the

end of 2016. It contributes toward SDG 12.6 which encourages companies to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

We need to have the right framework conditions. We need also in place the proper market signals, because otherwise we would not gear investment toward green projects. This is why we have fossil fuel phase out. On that, the Commission encourages EU member states in sharing best practices. We welcome that China plans to phase out fossil fuels subsidies in line with G20 commitments from the 2009 summit.

The circular economy is a great challenge, but it is also a great opportunity for Europe. Europe has limited resources, so we have ambitious plans. The idea is that we maximize resources. We go in the direction of changing the traditional linear economic model, where you use, consume, and throw away, and instead you go into a virtuous circle, from raw materials, design, production, manufacture, distribution, consumption, use, reuse, and repair. Then you recycle to get back into this virtuous circle and you become a more efficient economy.

We need to attract investors who are willing to invest in innovative small companies, in other words, investments which may be risky but which are essential to make the transition to a circular economy happen. There will be a range of support measures under the EU budget:

- Support for research and innovation through the EUR80 billion Horizon 2020 program. It is the largest innovation program in the world.
- A program for small and medium-sized enterprises. This is the first time in the EU that we have such a program. It is the COSME program – “competitiveness for SMEs” – which is also going to deliver venture capital and loan guarantees for small enterprises.
- Our LIFE funding, our specific environmental and climate fund.
- Support for eco-innovation.
- Support from the European Fund of Strategic Investment and the EU's structural and investment funds.

There is another instrument, the Natural Capital Financing Facility. It helps ensure that ecosystems continue to provide essential services to our society and economy. The private sector has recognized the opportunities for investment, but perceived high risk leads to market failures and missed opportunities. This is why we have developed this Natural Capital Financing Facility. It will lead initially to investments

up to EUR225 million to demonstrate the benefits of natural capital projects for the private sector. This will pave the way for significant scaling up in future, for a more competitive economy, for enhancing biodiversity and ecosystems, and for better adaptation to climate change. We have two China projects under this facility: one with UNEP to develop natural capital accounting in a number of countries, and next year we will have workshops and seminars on financial instruments for biodiversity and natural capital organized with MEP in Beijing.

Our big challenge globally is to finance the transition to low-carbon economies. Of course we need to transform our energy and transport sectors. The EU has carbon pricing through our emissions trading scheme and national carbon taxes. I would like to disagree with negative opinions on emissions trading schemes. It sends an important message, that is, that carbon has a price and the price will be growing and high in the future. It moves us in the direction of a low-carbon economy.

We have also decided in the EU that at least 20% of the EU budget until 2020 will address climate. Also the European Investment Bank has a 25% climate finance target. So we are using targets and objectives to mobilize the financing toward our policies. The European Investment Bank is right now financing a EUR1.25 billion framework loan program supporting climate action and afforestation in China. Together with member states, the EU is today the biggest supporter of climate action in developing countries. And of course we are happy to see others coming forward with climate finance and therefore welcome China's recent announcement.

But ahead of us lies something more important. A few months ago we had the New York agreement on the 2030 Agenda for Sustainable Development. This is an unparalleled global commitment to a positive and integrated agenda that tackles the three pillars of sustainable development. Now we must embark on the task of implementation. It will require unprecedented efforts, not the least from financing. We have to move from billions in overseas assistance, to trillions in investments of all kinds: public and private, national and global – according to the World Bank, the International Monetary Fund, and multilateral development banks.

Preliminary results by the Sustainable Development Solutions Network produce an estimate of 1.3% to 2% of world GDP invested each year by public and private and sectors, from now to 2030 to achieve the SDGs in every country. This is a formidable task. I believe there is momentum this year. The 2030 agenda

itself adopted, the great work by the UNEP Inquiry, the Addis Ababa Financing for Development conference, and the Paris climate conference ahead of us all are creating the momentum we need.

Next at the podium was **Chen Liang**, Director General of the Foreign Economic Cooperation Office, MEP. His talk was titled “Innovation and Practice: Key to Development of Green Finance in China.” Here are the main points:

Green finance started in the 1990s in China. Recent momentum has been rapid. The demand for green finance is bigger and its role is more important. The MEP minister proposed that by 2020 China needs to reverse the deteriorating trend of pollution. He has organized the amendment of the environmental laws and regulations and tightened enforcement, so in terms of lawmaking and enforcement the efforts are unprecedented. The enforcement campaign for atmosphere, water, and soil has been launched, and that has triggered a huge demand for green finance. It is estimated that these three campaigns of remediation will cost several dozen trillions of RMB and will be two to three trillion RMB each year. CCICED estimated a total budget of RMB40 trillion to RMB120 trillion will be necessary depending on the scenario. The government budget is far from enough for such huge investment, so we need to open up the market to attract international and domestic green finance.

The top level design for green finance includes the following promotion mechanisms:

- The Development Research Center of the State Council launched the research program on a green finance system for China.
- The People’s Bank of China launched a program to develop recommendations for establishing green finance.
- CCICED launched its own task force.
- MEP did a project on the identification of the priority policies for environmental investment, and the innovation of the environment market and finance has been listed as one of the top priorities.
- The Cross-Border Investment Council also established a green credit committee.
- The Chinese Society for Environmental Sciences set up a green finance committee.
- MEP established the environmental finance center.
- Renmin University set up an ecological finance research center.

Another positive development is the implementation of pilot programs. The Ministry of Finance and NDRC are promoting PPP programs. MEP is developing third-part remediation, and the financial regulators are also exploring green credit, insurance, securities, and funds. We joined with Chongqing, Hainan, Tianjin, and Jinan city to launch various pilots.

On 16 June 2015, the Resource and Environmental Exchange Center, the Environmental Investment Corporation, and the Environmental Industrial Equity Fund were formally launched. In a decision by the municipal government of Chongqing, the mayor was present at the inauguration ceremony of these three institutions. These three bodies operate well with major progress in investment and fundraising.

Here are some of the problems we found:

The imperfect policies and regulations for green finance. It is necessary to provide for the internalization for environmental cost, the incentives for green finance in the fiscal packages, the higher environmental standards and tightened enforcement in the regulatory system, higher level of requirements for disclosure, and the utilization of the pilot system for environmental purposes.

The fragmentation between the environmental authorities and financial institutions. We need a bridge between supply and demand to promote green finance. In Germany, renewable and clean energy developed well because of commitment to subsidies in past 30 years, especially for solar, wind, biomass, and waste-based power generation. Such subsidies have leveraged a lot of private investment into these areas. As a result the share of renewables is more than 50% of the total energy production. Only seven nuclear units still work, providing 16% of energy supply. By 2030 renewables will provide 90% of the power supply.

The lack of reward and risk control mechanism for private investment. Reward and risk determine the level of involvement of private investment. Although the enforcement campaigns may lead to a big market of trillions of RMB, still, without risk control and proper reward, private investors will not be channeled in. The first problem is the lack of technical support and availability of data. There is a lack of evaluation methods for environmental opportunities and risks, a database for the eco-environment, credit data for companies, and an infrastructure data platform for projects. At the World Bank there are many experts in different domains. We need that kind of capacity in China.

Here are some suggestions for developing green finance:

Innovation is a key. We need institutions, systems, and technical innovations. We need to run pilots. We know there is a big difference between China and more developed economies.

We need to ensure return for private capital and reduce their investment risks. If the investment cannot generate decent returns then there can be no investment from the private sector, so institutionally we need to have the right design

We need to develop the technical support systems and build the green finance technical service network. The environmental sector should work closely with financial institutions. We need environmental big data, that is, a national monitoring network so that we can provide a good data platform. The environmental sector should be able to provide effective information, channel technology and solutions and many other services for the development of green finance.

Money is money. Capital always goes after profits, but without rules, we cannot do it right. We believe that green finance will be very important to the overall green development.

The forum then heard from **Jan Olsson**, Sweden's Environment Ambassador. He spoke on the theme of "act now to invest in green transformation." Here are some highlights:

Since last autumn Sweden has a greener and more sustainability minded government than ever. The red-green coalition aims to make Sweden a fossil-free CO₂ neutral welfare state by 2050. This entails taking fossil fuels out of the transport sector. Our heat and electricity production already rely minimally on fossil-based sources. But with the additional intention to phase out nuclear – which now delivers 40% of our electricity – reaching these objectives will demand a lot of new renewable energy and a lot of investments, as with other parts of this ambitious environment and climate agenda.

Setting us on this road is the political responsibility of Minister Kristina Persson. She has appointed three expert groups, one dealing with green transformation and competitiveness. One of the starting points of that group is that climate and environmental ambitions will require proactive and concrete investments

and financing strategies. With a progressive investment agenda, Sweden could become an innovative and competitive new climate economy, cooperating with the like-minded and becoming a driving force in the EU and globally.

A further starting point is that sustainability-driven investments could and should contribute to an environmentally and socially sustainable transformation without having to compromise on financial and economic performance.

Sustainability-driven investment is not seen as being about increasing the total amount of investment. The challenge is a mismatch between the need of financial resources for the green transformation and the significant amount of capital that still flows to non-sustainable investments. At the same time there is an apparent lack of investment-ready or market-ready green investment projects in Sweden, not least such with a potential on the global market.

The most important purpose of a sustainability-driven investment and financing strategy is to change the fundamental perception of finance and risks, and recognize that climate and environment and social risks can cause instability and insecurity in society just as can real financial risks. Another important reason is to incorporate the user perspective and demand/market mechanism in investment models instead of the current producer/supply side perspective. This is vital not least for new technologies and solutions for the green transformation such as renewable energy and energy efficiency.

Another important reason is bringing down investment costs in climate friendly infrastructures, new technologies, and innovative solutions, by using new models for investment, business, and corporations. This expert group has so far only come up with some draft ideas for recommendations, but they relate to issues such as the carbon tax and reform of the EU emissions trading system, green investment and financing strategy up to 2050, green public procurement, mandatory reporting of carbon footprint measurements, taking a green look into recent financial sector regulations, facilitating pension funds to strengthen and renew their investment portfolios, greening the Nordic Investment Bank, and promoting the green bond market. On the surface they look like the recommendations of CCICED to China.

Keep in mind the importance of the green goods, services, or projects which are the precondition of any sustainability-driven or green investment – basically the stuff we need to invest in – and thereby the

importance of the need to create good opportunities for all kinds of businesses, to foster entrepreneurship and innovation. It also seems obvious that the strongest encouraging factor for the actors in any market is success. If money is to be made by green businesses and on green investments, others will obviously follow.

In that context, the OBOR initiative seems like a golden opportunity. If China succeeds in implementing something of this magnitude and keeping it green – thereby showing that it is possible – it could be a major push for the whole green financing agenda. And of course the possibility of China making use of its G20 presidency to push for action among states and institutions seems like another golden opportunity.

Simon Upton, China Council member and Director of Environment at the OECD, spoke about environmental financial reporting:

It's important to demystify what the financial universe is about, whatever its colour. The environment team I lead at OECD does more work on green finance and climate related finance than anything we do on climate mitigation or adaptation. If we want to raise funds for our work, there are more people wanting to fund green finance related work than things about the real economy, let alone the physical world. And I have to keep reminding everyone that the financial sector is a subset of the economy, broadly defined, and that is a subset of the planet.

The goal of good reporting should be ensuring that an intended audience is better reformed. In the context of financial reporting, the audience is ultimately investors and those on whose behalf they act. And the purpose is to enable them to manage risk. Financial systems exist to enable parties who may not know one another to transact business.

In premodern systems, confidence to trade relies on personal or family connections. In the contemporary world, we rely on codes or requirements of disclosure to ensure that at least in theory investors are able to make a prudent assessment of the risks they run. This becomes doubly important when the investors are acting on behalf of other people whose beneficial interest they have to protect.

Now, climate has emerged as a risk that is both generated by corporate entities (and also households) but those entities are also being threatened by those risks. So anything we say about the risk/return profile of investments that ignores climate risks is going to be a deficient analysis of what is at stake.

We will produce a report soon that makes a link to G20. We are looking at the key elements of mandatory climate change reporting schemes in G20 countries. Our research shows 15 out of the 20 G20 countries have some kind of mandatory climate change reporting scheme. All 15 schemes mandate reporting of direct or so-called Scope 1 emissions, but only 6 of the 15 require reporting Scope 2 emissions, which reflect energy consumption. None of them require reporting indirect emissions which for many industries are the bulk of their emissions – although there are four schemes that encourage reporting on those. Twelve schemes require that the reported information is verified in some manner, but only half of these require that it's done by a third party. All 15 schemes require reporting of domestic emissions, but only two require reporting emissions of subsidiaries in other countries. Interestingly, only nine schemes encourage reporting of other information, such as climate related risks and strategies.

Clearly, these differences of approach pose challenges for the audience, for the users of this information, and particularly for the financial sector. Reported information is largely insufficient and the lack of materiality and comparability of data limits their ability to take informed decisions about companies' performance regarding management of carbon emissions and climate risks.

In this report we also identify a number of ways to address these challenges as part of a roadmap for developing corporate climate change reporting.

The first observation is that the common features of the scheme should provide a strong basis from which further consistency could develop over time. We should build on this shared experience, because, despite the variability in the G20 schemes, the objectives are the same, which is a desire for social, environmental, and economic stability. These shared objectives provide scope to agree on a common way forward. We can only hope that China will give a push to the least ambitious of the G20 members, because if it's a case of all having to move together then we will need a lot more impulsion behind it.

Most G20 countries only require direct reporting of emissions, but these represent a small proportion of organizations' overall carbon footprint. We should try to better understand what further measurement and reporting infrastructure is required to support reporting along entire value chains.

There is extensive evidence of demand from investors for reliable climate change information that they can factor into their risk modelling, but we need to know more about the expectations of investors so as to be able to develop schemes and generate the information they need for that modelling.

Finally there is a whole bundle of technical reporting challenges, for example, how to define materiality for climate change related reporting purposes. What is material if you are exercising fiduciary duties? Which metrics or indicators to use for communicating climate change information, and how should they be calculated? How to account for carbon instruments and report stranded carbon asset risks? How to identify and communicate the organizational boundaries of the reporting organizations? Surely we can produce something much more focused and more relevant to the audience – that is, investors – something that they can use for their purposes.

The final speaker is **Tian Hui**, Director of the Finance Office of the Development Research Center of the State Council of China. She presented on the theme of “greening the financial system is more urgent than a green finance system.” Here are the highlights:

Here are my three main points: the green financial system in China embraces rare opportunities of development; there is still a lack of social consensus on the need for a green financial system; and in the whole process of financial reform, we need to embed the green concept.

My core idea is this: while we develop China's green finance system, green finance needs to be more closely integrated with other areas of financial reform so that all our efforts can be better implemented.

Green finance has been integrated into the master plan for the reform of ecological civilization. In the revised securities law and the banking law, green finance will be incorporated. The Shanghai stock exchange has already launched the carbon efficiency index for listed companies. And there are more cases of green investment as well. In terms of international exchanges, China is considering establishing a

G20 green finance research group. The China Agricultural Bank has also issued the first green bond in London denominated in RMB.

On my second point, I should say there has not been a social consensus on building a green finance system. It seems that the development of a green finance system is more of a top-down process. If we compare the will of the central versus local governments, we can see the disparity. Central governments are proactive, but local governments are less so. And between the will of the government and the will of the market there is also a difference. In some places, governments want to push for this, in the sense of building a local finance industry and pushing for economic transformation. But if we look at the local financial or quasi-financial institutions or the overall financial market, they are not really that positive or interested. The overall impression is that many local governments, financial institutions, or businesses do not realize that green finance is their own responsibility or mission.

Everyone is aware of the importance of financial reform, but what is the importance of green finance? We haven't yet reached a consensus. In what ways can we crystallize a consensus, so all those relevant policies can be well implemented on the ground in a sustainable fashion. There are various approaches to the problem.

In the first place, we can use means other than financial reform itself. For example, we should strictly enforce the new *Environmental Protection Law*, to make businesses pay a high price for environmental violations. We should also enhance the environmental accountability of government leaders at local levels. Environmental performance should be an important part of their political evaluation. Resource pricing and energy pricing reform will also be crucial. We should pay attention to the reform of the price formation mechanism of resource and energy products.

As for financial means, we need more pressure from regulators. All the regulators in the financial sector should pay attention to this. On top of this we should broaden the concept of green finance. It seems that the current definition of green finance is disconnected from overall financial reform itself. That is why it's more important to greenize the existing financial system than to develop a different so-called green finance system. That is why I believe that green development as a concept should be integrated into the overall financial reform in China. I give you some examples:

In certain areas, the definition of green finance is too narrow, for example, in insurance. When we talk about green finance, it seems that it is just about environmental pollution liability insurance. You also recommend that this should become mandatory. It is important, but even in developed countries it is a small insurance category. China is a big insurance market and is evolving very fast. If that is the only lever we are going to use for the insurance industry's participation in green finance then the scope will be too narrow because we have ignored the greening of the overall insurance activities.

The third part of my presentation is about integrating the green concept into the overall financial reform process. I believe that greening the financial system is more important than developing a totally new green finance system. The 5th plenum talked about five development concepts. Guided by these principles we should realize that green finance should not be an isolated system. As for reform, it should be not only top down but bottom up.

We should pay more attention to the effective implementation of policies. I have listed a number of the key reforms in which green concepts can be embedded, and some of the policy options. The People's Bank of China is introducing innovations in monetary policy instruments. There are some targeted tools, such as loans to the agricultural sector or to micro-businesses. So the green concept can be introduced.

As for China Securities Regulatory Commission reform, there is a pilot program going for private banks to lower the threshold into this industry. In the approval process for private banks we should encourage the setup of more banks that are oriented toward green credit. This approach is better than having a separate policy oriented green bank. In our research and study tours we found that in the information and technology sectors there can be similar examples.

Another reform is to make loans more available and accessible to small and micro-businesses. The government is coming up with a policy to provide a guarantee to these businesses. Insurances schemes can also be used to enable small businesses to better benefit from the loans. In our reforms we should also consider the green factor. A lot of fiscal subsidies are also given in this direction. Therefore in the selection process for projects, we can probably consider the green factor.

Concerning reform of the insurance market, there are many developments with agricultural insurance in China. Much fiscal support is given to agricultural insurance. Insurance is also being developed in many

regions as pilots. There are many other insurance reform agendas including liberalizing the investment of insurance funds.

Before opening the floor to general debate and comments, moderator **Chen Yulu** recognized **Ma Jun**, Chief Economist at the People's Bank of China. **Ma Jun** gave a brief summary of how the bank is promoting the green finance agenda:

Domestically, the People's Bank in the middle of last year created the green finance task force. We did the research in collaboration with the UNEP Inquiry, and produced 14 recommendations. Most of these recommendations went into the official document published by the Central Party Committee and State Council in September this year. The document is called *Integrated Reform Plan for Ecological Civilization*, and it contains a section about establishing a Chinese green finance system. That is the most official mandate given by the top policy makers for the financial sector to start greening itself. Within that document are 12 guiding statements including:

- using subsidies and guarantees to promote green loans;
- developing a green bond market;
- developing green equity indices;
- developing green insurance;
- introducing mandatory disclosure requirements;
- introducing lender liability.

Each is a policy. The People's Bank has now been given the mandate to lead the effort to establish the green finance system in China.

In April the People's Bank set up a green finance committee, which I chair. We created about a dozen specific programs or projects, each of which is now pushing in the directions outlined by the document.

China will propose to the G20 that we launch a study group on green finance, co-chaired by the People's Bank and the Bank of England with UNEP Inquiry as secretariat. We are looking into five potential deliverables for this group:

- *the role of the government in advancing green finance*. This is essentially about incentives, for

example, Germany's interest subsidies or the guarantee program for green projects in the US.

- *greening the banking system*, that is, requiring more banks to use high environmental standards in assessing projects when they make loans.
- *developing the green bond market*, which means creating new green bonds and enhancing the consistency of green bond standards worldwide to facilitate green capital flow across countries.
- *disclosure of environmental information* by listed companies, companies that issue bonds, and other financial institutions, as well as introducing a stress testing framework for financial institutions and markets.
- *greening the institutional investors*, including requiring more of them to include EIA in their investment decision-making process and enhancing their transparency.

General debate and comments

We are talking about the acceleration of the greening of financial institutions, rather than creating a new green financial system as such. In fact China's financial sector, especially bond and equity markets, is shallow. So we cannot really expect the deepening of green finance.

As for the demand-side, it really comes to the question whether each ministry in China is making its development proposals green enough, and whether MEP is taking a key role in coordinating those activities. We hope to see MEP lead other ministries and provinces to be greener, and for greater integration of market-based mechanisms.

The recommendations include one to pilot test green finance reform. Speaking as a financial sector practitioner, I say that being a financial intermediary is not rocket science. The things that need to be done are obvious.

A word of caution here: are we using the word "greening" too casually? The term "green PPP" scares me. Somehow it's just become so fashionable to put the word green on anything. China is actually struggling to introduce the right kind of PPP even now, so when we talk about green PPP I wonder what we really mean.

One recommendation calls for incorporating green finance into the G20 joint statement and encourages international financial institutions to develop green finance. If that includes us, I'm not sure what we are encouraged to do. Already our business is more than 50% green. So probably this recommendation needs to be more specific, because international financial institutions have already been encouraged to go green.

* * *

Is the debate about green finance or about greening the financial sector? This is a false debate. We are speaking, on the one hand, about how we can develop innovative financial instruments to promote green transformation. One example is the Natural Capital Financing Facility, an innovative proposal to ensure that ecosystems continue to provide services. But there is another challenge, which is that traditional industries need to become more sustainable. This has to do with the green transformation of the economy. So the concept is wider than just green bonds. We prefer to call it "financing the green transformation" either through specific measures which go to activities that are directed to the green economy, or else with a lot of opportunities that you have in traditional industries – the circular economy, the activities of small enterprises. I plead for a wider approach that allows us to integrate both concepts, because both are necessary. We will not be able to finance the environmental sustainability agenda, the green transformation that we need, unless we have both.

* * *

Chinese GDP will reach RMB600 trillion within the next seven years. Investment will be over RMB400 trillion. That will deliver RMB300 trillion of fixed assets. By 2020, green finance will only be 10% of this 300 trillion. Even under a high scenario, green finance is at a low level in China. Our target is not very ambitious. Concerning energy, by the end of the next FYP non-fossil fuel will take up only 15% of the total. The new energy vehicles that we are promoting by 2020 will only be produced in numbers of around two million, that is, 1/6 of the present production capacity for autos in China. That means there remains a huge space for green finance to develop and expand, so we need to move the bar even higher for the next FYP.

At the end of the comments and debate, forum co-chairperson **Achim Steiner** introduced the formal launch of the report of the Task Force on Green Finance Reform and Green Transformation. On his invitation, the task force co-chairpersons **Chen Yulu** and **Andrew Steer** thanked CCICED and the many other organizations and individuals who contributed to the project. In addition, **Chen Yulu** made these points:

This task force actually built three bridges. One is a bridge between green development and finance. For a long time in China those experts who study finance and those who study environment barely talked to each other. Through this task force the finance and environmental academia were able to work together closely.

Another bridge is between theory and practice. It is an important task force wherein scholars from universities are able to have close cooperation with the People's Bank of China, the Ministry of Finance, and financial regulators. This is probably unprecedented. We hope this team can be sustained to follow green finance in China.

The third bridge is between international and local experts. The World Resources Institute put together a strong team of experts, and they met with Chinese experts in both China and London. Through close cooperation, international best practices and experiences were accessed by my colleagues in China. International Council members provided much advice which has been beneficial to us.

At the conclusion of the Open Forum, **Achim Steiner** made these points:

The work of the task force is not about creating a parallel green financial system. It is about the finance system. Perhaps the task force asked the question: how in the financial system do you introduce innovation? This is the frontier of the debate, of the work, that the Council's task force has done that you have now taken into the G20. None of us can predict where this conversation will go in different countries. For the central bank of China and other central banks of the G20 to take this bridge that you have referred to, this is how new frontiers open up, how new concepts develop and innovation emerges.

Item 15. Open Forums Achievement Presentation

In plenary, China's Vice Minister of Environmental Protection and CCICED Secretary General **Li Ganjie** called on rapporteurs from each of the Open Forums to provide briefings on those sessions.

Li Yong of UNIDO reported on Open Forum 1: Greening "One Belt One Road." In addition to summarizing the presentations and discussions that he heard, he made these additional observations:

In my personal opinion, the most important strategic themes of the forum were:

- Minimizing environmental impact is a necessary precondition for the sustainability of the OBOR initiative.
- Important drivers for greening OBOR are environmental policy, a regulatory environment, and a strong capacity in the partner countries. These provide the framework for the accountability of enterprises.
- Key elements for minimizing environmental impact are the strengthening of systematic and informed planning, facilitating resource efficiency, and embracing regional environmental cooperation.
- China's substantial knowledge gained through the work of CCICED, regulatory experience, and in-country implementation will help other partners.

Next, the plenary heard from **Yvo De Boer** of the Global Green Growth Institute. He presented a straightforward summary of the discussion that took place in Open Forum 2: Think Tanks for Green Transition.

Finally, **Andrew Steer** of the World Resources Institute reported on Open Forum 3: Green Finance and G20. He structured his presentation in terms of seven "takeaways" which may be summarized as follows:

There is a narrow and a broad definition of green finance. The narrow definition is about finding specific funds for specific programs. The broad definition considers reforming the entire financial system so that

trillions rather than billions go in the right direction. We need both, but it's terribly important as the G20 approaches that we consider the broader reform. We do not want parallel systems.

Green finance is no substitute for sound environmental and economic policies. Without strong environmental laws that are implemented, green finance will not work.

Beware the green label. The fact something is described as green should not give it a free pass. The risk is that the label green will enable one to accept lower standards.

Exciting innovations are out there. One encouraging theme is the focus on leverage – on funds that leverage bigger funds – rather than on self-standing funds that live in parallel with the financial system.

Information, data, and disclosure are crucial. We heard about a forthcoming OECD report that asks: how many G20 countries are doing a good job with environmental data? The answer is: not enough.

China's leadership is learning – and showing – a new way to do international business. This comes from the work of the Asian Infrastructure Investment Bank, the Silk Road Fund, and so on. We heard how the EXIM Bank here for example is applying for accreditation with the Green Climate Fund.

The G20 has set up a study group with five key strands of work. In terms of what the G20 could deliver, the most important outcome is to raise the vision of the evolution of a financial system where environmental decisions will be fully internalized.

Item 16. Policy Recommendations: Report on Final Draft

Li Ganjie moderated the final discussion of the Council's policy recommendations to the Government of China. He introduced Chief Advisor **Shen Guofang**, who spoke briefly about the process and then introduced **Ren Yong**, Assistant Secretary General of CCICED.

Ren Yong provided a point-by-point description of the revisions made to earlier drafts on the basis of suggestions from Council members. Chief Advisor **Arthur Hanson** then made remarks about the subsequent steps in the revision process. **Li Ganjie** invited general comments from the floor. One member provided this suggestion:

The introduction should reflect the fact that four overarching issues come up in the task forces, emphasizing that systemic change is needed. The Council is exploring the four core issues of transformative change: transforming the legal system toward sustainability, improving governance capabilities and participation mechanisms, focusing on knowledge for transformation, and the financial system as the cornerstone of green transformation.

Finally, **Li Ganjie** added further practical details about the subsequent revision process of the recommendations and about the planned letter to China's Premier. The members by way of applause endorsed **Li Ganjie's** suggestions and adopted the recommendations.

Item 17. Closing Remarks

Moderator **Li Ganjie** invited **Achim Steiner**, in his role as CCICED Acting International Executive Vice Chairperson, to make concluding remarks. Here are the main points:

This is not a normal year for China or the international community. Clearly this is a year that will be remembered either for putting the world on another trajectory when it comes to sustainability, or for slowing us down or holding us back. It is palpable that transformation is the theme that is also guiding China's leadership and finding its expression in the new FYP.

The sheer breadth of issues we covered at this AGM shows that there is another term that will define our era of thinking about development: that is, complexity. There was once an era when development was defined by big but simple choices: industrialization, mechanization, the information technology revolution. The simple notion of tradeoffs or of a chronology of development is unlikely to serve us well in a world that soon will have to feed 10 billion people, and provide energy for 10 billion people, and deal with fundamental changes in terms of the environment writ large. The world will have to deal also with social tensions and phenomena like unemployment and youth unemployment. Providing perspective and hope – from poverty eradication to the ability of a family to earn a livelihood – will be as critical to sustainability as other factors.

This debate will continue within China as it has within other societies. What is the role of the private sector? It is massive and central, but within a regulated set of social choices we make. What is the role of civil society? Bottom-up citizen participation is a critical part of enabling implementation to happen, for monitoring to succeed, for enforcement to happen, not only through a top-down approach but also from citizen participation.

But who are the citizens who will speak? How do they organize? How do they contribute? How do they participate in this dialogue around implementation? These are questions to which the international Council members bring a diversity of experience. But they all share one message: if you do not find the right way of creating the space and opportunity for public participation, not only are you foregoing a tremendous opportunity, but sooner or later there will be a need to adjust because that public expression of "the people's choice" needs to find ways to express itself.

That idea is already reflected in part in what has been central this week: the notion of a transition toward an ecological civilization. A sharing economy in the western context is Airbnb, or the bicycles you can hire on the street. The notion of “sharing” in the new FYP is far subtler and more complex.

China is undertaking a journey that is as transformative for China as it is relevant to the rest of the world. It is echoed in the decision taken in New York with the adoption of the 2030 agenda and the SDSs by all nations. In the 15 years ahead it should be possible for China to demonstrate for environment and development – just as it did for poverty reduction under the era of the MDGs – that transformative efforts indeed can succeed and benefit people. All of us know that the single most significant contribution to poverty eradication in the past 15 years has been the contribution that China made.

I want to echo what you have heard repeatedly in the past few days: this is a Council that is focused on China, but it is also a Council that recognizes that this is China in the World. The OBOR and South-South discussions signal the next chapter in the articulation of this China-in-the-World relationship.

As we move toward the end of Phase V you have a great opportunity to shape the Council in its next phase that may turn out to be even more strategically relevant than in the past. Over its lifecycle it has been a very influential body, not in the sense of dictating, but in terms of questioning, in terms of validating, and sometimes also articulating that there are different theories of governance, development, and public participation. It is through this unique forum that China and the international community have created that they find an expression that many of us find in few other places. This remains the extraordinary opportunity of the Council.

Finally, **Li Ganjie** invited Minister of Environmental Protection and CCICED Executive Vice Chairperson **Chen Jining** to make his closing statement.

Chen Jining thanked everyone involved in the AGM. He summarized the speech by Vice Premier Zhang Gaoli and expressed full agreement with it, especially with Vice Premier Zhang’s support for CCICED.

Chen Jining summarized the proceedings of the conference and outlined the next steps in preparing the recommendations. Then he emphasized the following points:

Many people from different ministries are attending the AGM today. I hope they read the policy recommendations, absorb some of the insights, and reflect them in our work in the next stage to promote ecological civilization. This report will be important not only for the government and the public, but also for local governments and companies. It is important for us to reach out.

For the next five years we have already set clear goals for green development and ecological civilization. We must improve environmental quality in a general sense. The targets are clear but we need to be more specific. The Party Congress has already set the general blueprint, but the challenge we face in the next stage is to implement it properly. There are two important factors for implementation: decisions must be science based, and should also be systematic. They should promote the protection of the environment in a comprehensive way. And we need to learn from others so that we have an innovative way to do things.

Dear Council members and experts, your insight, experience, and thoughts will be very enlightening to us. In the process of decision making we need to be more systematic and more scientific. We need sharper and better focused analysis. The future direction should be translated into a more specific and detailed blueprint.

Mention has been made of the need to develop a *Soil Environment Protection Law*. The name of the law is not important, but the content is. At present you might find contradictions between laws. The core issue for the protection of the soil is supervision. We need to prevent the risk and at the same time supervise the quality. If this problem can be solved and these issues addressed there will be a big paradigm shift in the pattern of our supervision.

It is time for us to have a sound science-based decision-making process. We should know the details and the essence of well-established policies and practices, and find out in what way we can have breakthroughs.

CCICED provides suggestions for the Chinese government and the Chinese people. But CCICED can also help decision makers understand that different people might have a different understanding of the same issue. When our decision makers understand this, it will be beneficial to the decision-making process. The discussions within the Council serve as a good example. Even if we have different opinions, this is

helpful to our discussion. Future reports should reflect not only the consensus but also divergent opinions, which is extremely valuable.

Moderator **Li Ganjie** thanked everyone and announced the conclusion of the 2015 AGM.

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