THE CHINA COUNCIL

FOR INTERNATIONAL COOPERATION

ON ENVIRONMENT AND DEVELOPMENT

THE SECOND MEETING OF THE SIXTH PHASE

Innovation for a Green New Era

Diaoyutai State Guesthouse, Beijing

November 1-3, 2018

Summary Record

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ABBREVIATIONS

ADB	Asian Development Bank
AGM	Annual general meeting
AI	Artificial Intelligence
APEC	Asia-Pacific Economic Cooperation forum
BRI	Belt and Road Initiative
CBD	Convention on Biological Diversity
CCICED	China Council for International Cooperation on Environment and Development
CCUS	Carbon Capture, Utilization, and Storage
CO2	Carbon dioxide
EDF	Environmental Defense Fund
EPA	Environment Protection Agency
ETS	Emissions Trading System
EU	European Union
EV	Electric Vehicle
GDP	Gross Domestic Product
GHG	Greenhouse gases
GRI	Global Reporting Initiative
INBAR	International Network for Bamboo and Rattan
IPCC	Intergovernmental Panel on Climate Change
MEE	Ministry of Ecology and Environment
MEP	Ministry of Environmental Protection
NGO	Non-governmental organization
OECD	Organization for Economic Co-operation and Development
PAGE	Partnership for Action on Green Economy
PPP	Public Private Partnership
RMB	Renminbi, China's currency
SDG	Sustainable Development Goal
SISO	CCICED Secretariat International Support Office
SPS	Special Policy Study
UN	United Nations
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
WEF	World Economic Forum

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I. Introduction

The China Council for International Cooperation on Environment and Development ("the Council" or CCICED) was established in 1992 by China's State Council 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 the environment and sustainable development for the Chinese government's consideration. It has convened 27 annual meetings organized into 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 members from China and around the globe, who were chosen for their experience, expertise and influence.

The Council is chaired by vice premier of the State Council, Han Zheng. It was at his invitation that the members of the Council attended the second meeting of Phase Vl. The CCICED executive committee serves as the executive body of the Council.

The Council's host institution is the Ministry of Ecology and Environment (MEE). It has established the CCICED Secretariat 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, afterward by Environment and Climate Change Canada.

This Summary Record of the CCICED's second meeting of Phase VI was prepared by Ms. Niki Hope for SISO, based on detailed notes recorded during the annual general meeting (AGM). Representing SISO's interpretation of the general debate and 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 the discussion, without attribution to individual speakers – unless identified on the program.

II. Annual General Meeting

1. Roundtable on Low-Carbon and Circular Economy for Green Development

CCICED vice chairperson Achim Steiner, United Nations Development Programme administrator, called to order the roundtable on Low-Carbon and Circular Economy for Green Development. Steiner co-chaired the roundtable with CCICED vice chairperson Vidar Helgesen, Norway's special envoy to the High-level Panel on Building a Sustainable Ocean Economy, and former Minister for the Ministry of Climate and Environment, Norway.

Mr. Steiner made the following remarks:

In Asia, many countries are at the forefront of re-inventing their economies and thinking about development in the broader sense. The laws of development for the 20th century have become irrelevant. The emphasis is on governance mechanisms, the role of the business community and partnerships. The question is, why is it not happening automatically?

Time is our greatest enemy today. It's not that we lack ideas, solutions, technologies, innovative policies, public awareness and support, but time has become the most precious commodity. The 2030 agenda of the Sustainable Development Goals (SDG), meant to be the great transitional moment for our society within a global or national context, is only 12 years away.

China has defined many of its breakthroughs in economic terms, but the country has remarkable stories to tell about how opening up has also transformed the pathway of its sustainable development trajectory.

Mr. Helgesen made the following points during his opening remarks:

There are positive developments in technology – the price of solar power has dropped by 86% since 2009, the cost of wind power by 67%, and these trends continue as capacities go up and prices go down.

Government needs to take stock and leadership in policy, tax regimes, public investment and recruitments, to send the right signals to markets because the opportunities for climate-friendly technologies and circular models are there. Given that time is indeed an enemy, we need to ensure that we are unlocking the opportunities of the green economy rather than locking in the misery of the old economy.

Zhao Yingmin, CCICED secretary general and MEE Vice Minister, shared his observations:

The Chinese government has attached great importance to the green economy, not only to pollution control but also the circular economy. The 19th Party Congress has emphasized the target of ensuring the harmonious existence between humans and nature and to resolutely campaign against pollution.

At China's Ecological and Environmental Conference in May, President Xi Jinping stressed the significance of the ecological environment in ensuring the welfare of citizens, saying a green economy will benefit the people. The Chinese government has enhanced legal frameworks by introducing institutional reforms and integrating government protections for land, water and sea.

We have also treated waterways, set controls on heavy polluting diesel trucks, and promoted the concept of green development to increase efficiencies and encourage citizens to use green mobility consumption and logistics.

China is fulfilling its commitments under the United Nations Framework Convention on Climate Change (UNFCC), as well as the Convention on Biodiversity (CBD) and the Marine Environmental Protection treaties. By 2020, we will host the CBD Convention of the Parties (COP) and hope to map out an implementable, post-2020 CBD protection strategy.

Canada's Minister of Environment and Climate Change, Catherine McKenna, CCICED Executive vice chairperson, made the following opening remarks:

Oceans, plastic pollution and the circular economy, are similar to a trifecta – bringing all of those together is important. When we look at the circular economy, we know the problem. We are treating the planet as a dump. If we want to have a beautiful planet, we are going to have to do a lot better when it comes to the circular economy. Being smarter about resources and not throwing them away also offers a huge economic opportunity.

One of the ways to raise our ambition is to reimagine how we are doing things in the first place and move away from the "take, make, dispose" focus. At the global level, the circular economy is not only crucial for staying below 2-degrees but can also help us achieve the UN SDGs, meet our future resource needs and address environmental issues. But it requires a fundamental shift for both the private and public sector.

The big question is how do we create an effective global economy that produces less waste, lowers emissions and retains value? One focus has to be plastics. If we don't act, we will have more plastic by weight in our oceans than fish. We know that 95% of single-use plastics, like straws and packaging, becomes waste almost immediately, which harms our oceans, lakes, rivers. A plastic bag takes five seconds to make, five seconds to use, five centuries to disappear, but it never really does – it just becomes microplastics.

There is also an economic case for this. Right now, we are throwing out $100 to $150 billion in lost value annually. Our government has resolved to take a lifecycle approach to plastics, aiming to avoid unnecessary use of plastics to prevent waste and ensure plastics are designed for re-use and end-of-life management to prevent waste from the start.

One focus has been on the Oceans Plastics Charter that we have led globally. Many countries have signed up, and recently many companies – including Walmart, Coca-Cola, Nestlé Canada, Ikea – have also supported the initiative. We know we need to work with these companies to reduce plastic

waste, to make companies part of the solution and also consider how we support developing countries.

To transition to a more circular economy, governments need to engage businesses and consumers. Companies need to think about value creation. Consumers have to have confidence in the circular economy. It is safe to say that citizens are way ahead of governments and business when it comes to caring about plastic pollution. We owe it to them to step up and figure out how we can do better.

China is committed. One of the measures that had a significant impact on our country was China's import ban on certain plastics and waste materials. It was a wake-up call for municipalities that were sending their waste abroad. It means we all need to rethink how we are doing things because we know the linear economy is no longer sustainable.

The chairperson introduced Mr. Andrew Steer, CCICED member and president and CEO of the World Resources Institute, to moderate the first session, Challenges and Measures in Creating Innovative Governance Mechanisms. He introduced Mr. Hideki Minamikawa, CCICED member and president, Japan Environmental Sanitation Center, who shared his thoughts:

I appreciate China's efforts to control air quality. These improvements will lead to greater confidence in the Chinese government. We must give enough consideration to environmental science. For instance, illegal dumping and inappropriate disposal represent a considerable cost if we are to restore the environment. It is critically important to establish a supervision system for waste disposal.

Establishing a monitoring system on contamination in the environment is essential. Citizens expect to comprehensively understand the state of the environment, air quality, soil contamination, and other matters.

Mr. Wang Tianyi, CCICED member and executive director and general manager, China Everbright International Limited, made the following remarks:

People believe we have reached a consensus on climate change, but this is far from reality. We need to work harder to disseminate information and scientific results and ensure people understand the importance of the issues.

China Everbright is the largest operator for landfill combustion power generation in Asia. We process over 50,000 tons of waste every day. For China, the challenge is managing the everyday waste we generate. We have 1.3-billion people, so if we don't deal with the waste properly, it will end up as ocean waste.

We have the technology for waste disposal and treatment, and our experience is something other countries can copy. The central government provides subsidies for waste combustion through a private public partnership (PPP) model. Government can realize value for money, while business can have reasonable returns, and citizens can receive better public services. We started using this treatment in Vietnam, with the central government subsidizing the project quite successfully.

Inger Andersen, CCICED member and director general, International Union for Conservation of Nature (IUCN), made the following points:

If we start with the low-carbon story and take a historic walk back 21 years, from the beginning of the UNFCC to Paris, it is remarkable that it took this amount of time to get an agreement that did not have a price for carbon. I am a child of Denmark, who grew up during the oil crisis where the Danish government put huge subsidies toward developing wind energy. What we have seen is that government subsidies can shift production. I saw it in the '70s, and now we see it on a global scale.

If we got one thing out of the failed UNFCC COP 15, it was the target of 2-degrees. We began to understand that the footprint cities put down lasts forever. Density, livability, efficiency, mobility and safety, these are the elements to consider in green development.

For biodiversity, I want to paint a picture of 30-60-10. Thirty percent of our nature is less interfered with globally; 60% is where we have our agriculture and industrial work (mines, etc.); and 10% is where our cities are. When we speak about low-carbon development and the circular economy, we must think about this 30% – keep the wild, wild, and protect it more. With the other 60%, we need to consider what kind of economic activity we envision for ourselves concerning investing in nature's infrastructure.

Mark Tercek, CCICED member and CEO of the Nature Conservancy, made the following comments on the challenges of creating innovative mechanisms for green growth:

One of the fundamental governance challenges of sustainable development is the mismatch between administrative boundaries and natural systems. Laws, determined by political boundaries drawn on a map, govern our world. Most nations also divide up decision making among many agencies, which focus on different areas such as agriculture, oceans and air. But most environmental issues are interconnected.

A major challenge is how governments can coordinate decisions across different agencies on a large scale. My organization faced this issue in the U.S. when we were considering the Mojave Desert for solar investment. We worked with federal, state and local governments to implement large-scale spatial plans for solar sites across multiple jurisdictions and to identify the best location for developments.

Using this approach drastically cut approval time, even though there was more approval time up front, and produced cheaper electricity and cleaner energy even faster. Additionally, large-scale spatial planning is key to understanding the big picture, saving time and money, and is integral to green development overall.

Amy S.P. Leung, director general, East Asia region, Asian Development Bank, made the following comments:

Our experience is the transformation from a traditional economy to a low-carbon or circular economy is hard in any country, but particularly in the developing world because countries need to grow faster, and green incentives aren't enough.

We finance infrastructure projects, and our experience shows that technological change is not enough. We also need behavioural change, which is an area that requires more work to educate decision makers and consumers.

Regulation and policymaking, such as pricing greenhouse gas emissions, and enforcement are essential. Knowledge sharing is also important, and in this respect, we are communicating our successful green projects not just within China, but with other developing countries.

General debate and comments

My organization represents 44 countries that have realized that wood and bamboo is one way you can build a low-carbon economy. With bamboo, you can make sustainable products from grass that can replace high-carbon products. For example, you can replace disposable cups, plates and cutlery with bamboo. We need to plant more bamboo and support small and mid-size enterprises in developing countries.

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WWF supports China's Ecological Civilization concept, and we welcome the Belt and Road Initiative (BRI) as a way to redesign many dimensions of planning and development. The focus of the BRI is now turning from planning to execution, and it is a fantastic opportunity to consider BRI as a tool for different ways to invest in infrastructure and delivering net benefits for the planet.

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China has launched many policies, initiatives and regulations, all of which have played a critical role in the circular and low-carbon economy. But on the other hand, we have noticed problems that conflict with policy direction, highlighting the core issue of how we build on current laws and regulations to play a more active role.

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Mr. Peter Bakker, CCICED member and president of the World Business Council for Sustainable Development, moderated the second session on the Role of the Business Community in Green Development. He opened with the following remarks:

At a recent roundtable, business leaders in Australia stated they are challenged by an unpredictable political arena and don't know how to move forward on business action and climate change. Yesterday, I visited Xiong'an, a new green city being built 100 kilometres from Beijing, which demonstrates how the future is built in a system-wide way right here in China.

The moderator introduced Mr. Félix Poza Peña, CCICED member and chief sustainability officer of the Inditex Group, who presented a short video outlining the changes his company is implementing to reduce waste and resource consumption through 'upcycling'. He made the following remarks:

Our aim is to create beautiful, ethical products that are not only right for the customer but good for staff, communities and the environment. We are committed to sustainability and respect for human rights. We have used the guidelines for the action platform for reporting on the SDGs. Within our stores, we are working to ensure the availability and sustainable management of water, sanitation, production and energy. We also support sustainable behaviour for both our suppliers and our customers.

Since 2015, we have worked with the MEE and CCICED to share the concepts of our eco-efficient stores. We operate in more than 96 markets in China with 100% of our stores being eco-efficient. We

also offer in-store recycling and clothing collection from our clients, to ensure the materials gain a second life.

The moderator introduced Mr. Ling Wen, general manager of China Energy Group, the largest energy organization in China, who made the following comments:

In China, fossil energy is 86% of the market, while the renewables are only 14%. ***President Xi Jinping*** said that in 2030 we should reduce this percentage to 80% fossil fuels and 20% renewables. It is a tough task, even though 80% still seems high.

We should ensure the use of renewables, such as wind and solar, moves quickly. Another task is how to make conventional energy, such as coal, more clean, efficient and even solve the problem of carbon capture, utilization, and storage. Before we enter into our coal mines, the vegetation ratio should only be 3% to 11%, and once the exploration for coal is complete, this percentage should increase to more than 70%. Water is another area we are concentrating on to ensure safe outcomes.

Mr. Stephan Sicars, director of Environment Branch at the United Nations Industrial Development Organization (UNIDO), shared these remarks:

The circular economy as a concept is meant to be a preventive effort to use economic drivers to prevent pollution. We all agree that it is a global issue – it has to be universal to make a global impact.

The circular economy is just about recycling waste, and it won't solve everything. But if you look into what we want to achieve, we need to focus on resource efficiency. If you are efficient with resources, we pollute less.

On the technical level, circular economy means changing business processes, which is difficult. There has to be an inherent change in business models, and there will be winners and losers, which frightens people and makes change more complicated. Business in the circular economy needs open regulation, financing and incentives. Measures to create a supportive framework include innovation from business and industry, consumer awareness, prioritizing quality over quantity, and investment in industry.

General debate and comments

We need to consider how circularity impacts others. For example, the second-hand market has greatly depressed the textile industry in Africa. It's a conversation that is very active at such NGOs as Oxfam because there is an awareness of the human cost.

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When you think about the Paris objective of 2-degrees or better, recognize this depends on the total amount of CO_2 emitted over time. If you want to meet the 2-degree requirement, you have to go to zero car emissions by 2050, and you must start now. We're not doing that. It is true that China has more wind capacity than any other country – even the U.S. – but let's recognize that China doesn't use as much wind energy as the U.S. We need to have a different and more aggressive view of where we are going to be by 2040.

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Mr. Dominic Waughray, CCICED special advisor and head of the Centre for Global Public Goods, World Economic Forum, moderated the final roundtable session on Partnership Development for Low-Carbon and Circular Economy. He opened with the following remarks:

There needs to be a systems approach, including in governance and regulations. The question is how, and how to make it go bigger and faster? China is providing wonderful innovation on this.

The moderator introduced the first speaker of this session, Ms. Kathleen McLaughlin, CCICED member and chief sustainability officer and president of the Walmart Foundation, who made the following remarks:

At Walmart, we take a whole-systems approach to climate and the circular economy. We use partnerships to accelerate progress in goal setting. An example is Project Gigaton, where we utilize Paris Agreement numbers and break them down into specific requirements in different aspects of the solution.

How much of our emissions reductions need to come from sustainable agriculture, packaging changes, energy consumption, natural capital, consumer product innovation, waste reduction? Each has a number that we can then translate to our suppliers and invite them to join and do their part – specifically signing up to one or more of those pillars. Another approach to partnerships is by working with non-profits and government agencies to ensure capability building, acceleration, progress tracking and incentives.

Mr. Stephan Contius, CCICED special advisor and commissioner for the 2030 Agenda for Sustainable Development with Germany's Federal Ministry of the Environment, Nature Conservation and Nuclear Safety, made the following comments:

If we want to achieve the goals of the 2030 Agenda and the Paris Agreement, it is critical to transition to a low-carbon circular economy. In 1980, we consumed 36 million tonnes of raw materials worldwide; by 2015, this figure had increased to 85 billion.

At the same time, the global population continues to grow. In 2050, there will be an estimated 9.7 billion people living on this planet, striving for prosperity and better lifestyles. Constant consumption contributes to rising CO_2 emissions and climate change. This means we have to change the way our economies work, including our production cycles and product design.

The German government believes the formation of new partnerships across sectors, stakeholders and borders is key. As a result, we have launched two initiatives, including implementing the G20 Resource Efficiency Dialogue, to enhance cooperation on resource-related SDGs, exchange of good practices, and knowledge expansion.

Additionally, Germany supports Partnership for Action on Green Economy (PAGE) to embark on the transition to a green and circular economy. This partnership puts sustainability at the heart of economic policy and practice to advance the goals of the 2030 Agenda.

Ms. Galit Cohen**,** CCICED special advisor and Israel's deputy director general for Policy and Planning, Ministry of Environmental Protection, made the following comments:

The role of business in driving the low-carbon and circular economy is a central one that offers many opportunities. I want to focus on the consumption side, which is also essential and remains a challenge in policy and practice.

Research has demonstrated that consumers tend to obtain a false negative perception of the quality of products or services in different circular models, which poses a major market barrier. There are already various solutions taking place around the world to address the quality barriers, including a national certification scheme for second-hand products in Scotland.

Certification supports consumers and harmonizes approaches on a global scale. We must work together to ensure more informed consumers to inspire behavioural changes.

Mr. Liu Dashan, chairman of the China Energy Conservation and Environmental Protection Group, made the following remarks on partnerships for the circular economy:

Our agency's core business includes industrial energy conservation. We have managed more than 2,000 energy projects, including energy conservation in buildings, and we are currently working in the new City of Xiong'an on the use of thermal heat. Additionally, we have partnered with multiple cities on the treatment of municipal wastewater, soil restoration and management of sludge, along with the implementation of wind and solar power.

The key theme of this discussion is partnerships. It is difficult presently to find the right business model. Many technologies are not economically viable at this point. We hope to get more support from the government, with regards to boosting public awareness, to connect with like-minded partners and promote the development of a circular economy in China.

General debate and comments

Apple is questioning whether it is possible to produce products without using natural resources, which, of course, requires innovation. Apple is looking at how to use renewable energy to reduce carbon emissions and how to develop a green supply chain. Twenty-three of Apple's suppliers have agreed to use 100% new energy to produce Apple products. Last year, the company set the ambitious goal to one day use recycled materials to produce Apple goods and change the current linear product lifecycle.

Apple has developed a second-generation robot, called Daisy, which helps dismantle nine different types of phones. For every 100,000 dismantled Apple phones, Daisy helps to collect 1,900 tonnes of aluminum and other metals. Apple is also committed to using recycled metals for some new products.

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Almost all governments are interested in doing more. The question is how to close the gap between government and the opportunities for business and concerned citizens. If sustainable development is the new oil, then trust is the new currency. We will not reach any of the SDGs without having local success stories.

2. Environment and Development Open Forums

a. Forum 1: Green Belt and Road and Sustainable Development Goals

Mr. Li Ganjie, CCICED executive vice chairperson and MEE minister, and Mr. Erik Solheim, CCICED vice chairperson and UN Environment (UNE) Executive Director, co-chaired the forum. Mr. Li opened with the following remarks:

The BRI is not only devised for economic prosperity, but also for green development. For five years China has actively promoted a green BRI by emphasizing this as a platform for green services. We have organized government partnerships in Cambodia and Kenya and have released green BRI guidelines and for an ecological conservation plan.

China has encouraged companies to shoulder their environmental responsibilities and supported the training in China of personnel from BRI countries. More than 20 seminars and workshops have been organized, and BRI countries have sent more than 800 delegates to these events. Building a green BRI will give great momentum to BRI countries and encourage the realization of the 2030 SDGs.

Mr. Solheim made the following comments:

We all know the exceptional economic developments in China, but some might not be aware of the country's environmental achievements. Pollution has decreased in Beijing and other cities; China is now the largest producer and consumer of renewable energy in the world; and China has doubled its forest coverage since the 1970s.

The primary objective of the BRI is to bring China's best practices to the rest of the world. Much of the debate and criticism of the BRI took place before the project started. The formal launch of the UNE-brokered BRI Coalition will happen next spring at a large conference to which all participants are welcomes. To date, ten nations have joined the Coalition, with Russia being the most recent to sign in. The Coalition can play a crucial role in establishing standards and green finance.

Mr. Li Yong, CCICED council member and director general of United Nations Industrial Development Organization **(**UNIDO**),** gave the keynote address and emphasized the following points:

After the 2008 financial crisis, green has become a driver of growth. The establishment of the 17 SDGs is a global call to action. China's BRI is a far-reaching program meant to revive trade routes in Asia and beyond and to reshape trade in the 21st Century. The pursuit of a green BRI will improve the chances of realizing the ambitions of the 2030 Agenda.

The Chinese government is committed to a green BRI, which will encourage a global push toward green development. UNIDO has created a forum for sustainable urban centres along the belt and road corridor, growing from 50 to 198 cities.

UNIDO believes the BRI will increase the chances of achieving sustainability because it entails investment in infrastructure that is proven to be environmentally and socially sustainable, and it integrates sustainability conservation into all investment decisions.

Mr. Solheim moderated the first session of the Forum on Synergy between Green Belt and Road and the 2030 Agenda for Sustainable Development. He introduced Mr. Shi Yulong, CCICED Special Policy Study (SPS) team leader and director general of the China Center for Urban Development

with the National Development and Reform Commission (NDRC), who made the following remarks:

Saihanba, on the edges of the Mongolian Desert, used to be barren, but thanks to various ecological restoration schemes, the area is now covered with forests. It stands as an example to the world of what is possible in difficult environmental circumstances.

Some developing countries along the belt and road corridors, where the ecology is fragile, are having trouble realizing the SDGs. These countries are struggling to eradicate poverty and also face the challenge of achieving balance between the environment and development. To promote a green BRI, UNIDO suggests applying robust green principles. In addition, the BRI Coalition is encouraged to forge partnerships and establish environmental assessment mechanisms, as well as a green development fund to secure the necessary financial support.

Ms. Aban Marker Kabraji, SPS team leader and director of IUCN's Asian regional office, made the following comments:

The BRI is an important environmental challenge, but it is also an opportunity. There is much that organizations such as the International Union for Conservation of Nature (IUCN) can contribute, and a coalition is a first step in bringing this expertise to bear.

The BRI brings valuable investment to participating countries – it is designed to reinvigorate the flow of goods and capital between Asia and the rest of the world. It focuses on five keys areas: policy coordination, facilities connectivity, investment, financial integration and cultural exchange. Its main activities are the promotion of trade and investment, and infrastructure building, including roads, railways and pipelines.

Infrastructure investments, if poorly planned, could damage the environment and local communities. In 2017 alone, more than 7,000 BRI projects were launched; coal and hydropower projects are particularly common. Currently, there are very few solar and wind power projects. Three-quarters of BRI projects are in the automotive and transport sectors; the portfolio is expected to shift toward manufacturing in the future.

The current environmental footprint of the BRI shows red zones with coal-fired power plants, manufacturing and construction of factories. There is also a risk to biodiversity, as the BRI overlaps the habitats of many threatened species.

There are opportunities to enhance regional cooperation and the adoption of international legislation standards for the sustainable use of the oceans and to protect biodiversity. There are opportunities to leverage the BRI to positively influence policy in some countries and to strengthen global efforts to combat poaching and the illegal wildlife trade.

To fulfill its potential, the BRI must offer more than economic returns; it must be both socially and environmentally sustainable. Countries welcome the BRI because it could change lives, and if done well, this could be the most transformative project of the 21st century.

Mr. Wang Xiaolong, Department of International Economic Affairs, Ministry of Foreign Affairs of China, made the following comments on the synergy between a green BRI and the 2030 Agenda:

At the first BRI international forum in 2017, President Xi Jinping said we must adopt green development lifestyles and advocate both low-carbon and circular production to realize the 2030 SDGs. China has issued green guidelines for the BRI, along with country-specific SDG plans. China built the data platform for the green BRI and, along with the international community, has promoted the establishment of the BRI Green Coalition.

We encourage BRI participants, including Chinese companies, to protect local environments. For example, construction of the Nairobi railway includes the provision of passages for animals. In the cooperation between China and Singapore, mining companies store surface soil, and once drilling is complete, the landscape is restored, and trees are planted, with an 80% survival rate.

Ms. Nosipho Ngcaba, director-general of Department of Environmental Affairs of South Africa, made the following comments:

Enabling synergies between a green BRI and the SDGs requires the adoption of principles of circularity, low-carbon development, and sustainable marine use. Better ways must be found to climate-proof the BRI, including through land-degradation neutrality, restoring ecosystem services and preventing wetland destruction.

It would be advisable for the Council to recommend that the BRI adopt a balanced approach in order to actively align with the 17 SDGs and their targets while developing and implementing projects to maximize the inherent synergies between the BRI and countries' environmental plans.

Mr. Iskandar Abdullaev, CCICED special advisor and executive director of the Regional Environmental Center for Central Asia, made the following comments:

Two points are emphasized: Central Asia is already very close to China and is benefitting from its investments, and Central Asia is part of the regional environmental circle and can offer the BRI some ready-made platforms.

China is the major investor in Central Asia, an area with a growing population and economy. This puts pressure on the environment. In addition, the area's infrastructure is outdated and necessitates further investment. The challenges related to climate change and water issues are sizeable.

Central Asia's biodiversity is under threat, and ecosystem degradation to mountain areas and forests is serious. Waste generation in the region is also a challenge, with almost 500-million tons of waste produced annually, mostly from industry; only 10% is properly recycled. While this presents opportunities for investors, it also generates important concerns if these issues are not resolved.

Countries in the region have different poverty rates and access to technology, although they share similar geography, history and languages. Central Asian leaders are now discussing shared environmental issues. There is a willingness to coordinate regional cooperation with international partners, creating a positive climate for a green BRI in Central Asia.

Improvements could be achieved through green jobs, capacity building, innovation and public information. There are already robust regional platforms and several effective coalitions working to green the BRI.

Mr. Solheim introduced Mr. Andrew Steer, CCICED member and president and CEO of World Resources Institute, to make opening remarks for the second session on the Belt and Road Initiative and Green Finance. Here is a summary of his comments:

China has been a leader in the greening of finance domestically. It will be important to apply the same principles internationally through the BRI.

Most financial institutions still lend and invest in carbon-heavy activities; this is also what the BR countries have been requesting. But this will need to change in the coming years. In the 1990s the World Bank found it needed the expertise to lend for environmental projects. It is difficult to make this shift, as lenders are finding for BRI projects.

Loans from China's six largest banks, including state-owned, have gone to the transportation and energy sectors; most public enterprises have invested in carbon energy, while two-thirds of the private sector's capital has been invested in renewable energy.

China's Nationally Determined Contributions (NDC) indicate that China should invest something like $470 billion in renewable energy. There are lots of opportunities here concerning the goal of investing in renewable energy as stated in the NDCs, but it requires a build-up of expertise, which takes time.

Mr. Oyun Sanjaasuren, director of Division of External Affairs of Green Climate Fund, former Minister of Environment and Green Development and Minister of Foreign Affairs of Mongolia, made the following remarks:

China is showing serious leadership in trying to solve environmental challenges. Clearly, an unprecedented transition is required in all sectors and especially in the BRI. The BRI decisions made over the next five years will influence whether the world will be warmer or not.

Greening the BRI must be a priority. Aligning the financial system with the SDGs and low-carbon development is the catalyst for the paradigm shift.

The Green Climate Fund was created to help developing countries. Since 2015, its portfolio has grown, with projects in 96 countries. There is a massive demand for these kinds of projects because there is a political and public shift demanding green projects.

Mr. Peter Bakker, CCICED member and president and CEO of the World Business Council for Sustainable Development, made the following comments:

There is a funding gap of $3 to $4 trillion for the realization of the SDGs annually. There is no other investment plan anywhere else in the world of comparable scope or scale as the BRI. It is therefore critical to ensure that BRI investments align with the SDGs.

In 2015, the new climate economy report indicated that within the next 15 years the world will invest $90 trillion in infrastructure. With only marginal incremental costs, today's infrastructure investments could be green.

China knows how to ensure the BRI is green. There needs to be innovation in financial products, green investment standards, and alignment of codes among countries. Companies have to be held accountable to ensure a strong value chain and the development of new products that are

sustainable options for consumers. These companies need to provide healthy working conditions, actively develop new markets, integrate sustainability into investment, and ensure radical transparency.

Mr. Wang Wen, professor and executive dean of Chongyang Institute for Financial Studies, Renmin University of China, offered these comments:

In the Western media, there is a negative perception of the BRI, which is not seen in the countries that are part of this initiative. This is of concern. In the last five years, most of the BRI projects have been standard ones, based on market principles.

This is the 40th anniversary of China's "reform and opening". The BRI is only in its fifth year, so one could compare this to China in 1983, just after "reform and opening" started. China was poorly perceived at the time, but as the years progressed, this changed. The BRI should also be judged over time.

Mr. Li Ganjie, CCICED executive vice chairperson and China's MEE minister, moderated the third session on International Partnership for Green Development on the Belt and Road. He introduced Mr. Guo Jing, director general of MEE's Department of International Cooperation, who made the following comments:

At the international BRI summit, Chinese ***President Xi Jinping*** said it is necessary to develop a Green BRI Coalition to strengthen communication, share data, enhance the transfer of technology, boost green investment and protect biodiversity.

This coalition now comprises 80 members, including governments, NGOs and international groups. China plans to officially launch the coalition next year and explore how best to expand and strengthen it. Ideally, the coalition will become a platform for exchanges on greening the BRI.

Mr. Marco Lambertini, CCICED member and director general of the World Wildlife Fund, made the following remarks:

WWF has issued a report indicating 60% of the globe's wildlife population has declined in the last 40 years, which is an indicator of the impact humanity is having on the planet. Infrastructure development is a significant driver of that decline.

WWF is doing some analysis on two BRI projects – one is a proposed hydro dam project in the heart of a nature reserve in Tanzania. This dam could seriously affect the ecosystem, along with eco-tourism and the economy. In this case, Chinese companies decided not to pursue or bid on that project, which was an excellent example of coherence with the environmental principles of the BRI. WWF welcomed this decision.

WWF also considered another hydro dam in North Sumatra. The environmental risks of the dam were underestimated; the environmental impact assessment was complacent and didn't fully reflect the risks. This project has started, generating vigorous protests.

These two projects highlight the opportunities and challenges to greening the BRI. Partnerships between lenders and government are essential to support the political commitment to the BRI. It is vital to engage society early in these projects before damaging decisions are made.

WWF also argues that it is critical to pay attention to nature's highways, which allow wildlife to thrive. Nature's highways are integral to maintaining ecosystem functions and services, which form the foundation of human well-being and are at the core of sustainable development.

Mr. Wang Tianyi, CCICED member and executive director and CEO of China Everbright International Limited, made the following points:

China Everbright was invited to become a green partner of the BRI, which is a huge responsibility. Many of the 17 SDGs centre around investment and infrastructure.

Currently, the company has launched a waste-disposal incinerating plant in Vietnam. This project involved close cooperation with the Asian Development Bank (ADB) as one of the lenders supporting this investment in Vietnam. China Everbright was then awarded a second waste disposal plant in Vietnam. PPPs will be useful in building a green BRI, as water and incinerator infrastructures require vast sums; this would be difficult to realize without PPPs.

Ms. Galit Cohen, CCICED special advisor and Israel's deputy director general for Policy and Planning in the Ministry of Environmental Protection, said the following:

China should consider the development of sustainability criteria for companies and investment going into the BRI and the establishment of a dedicated BRI-certification scheme. This would send a strong market signal and accelerate the adoption of environmentally sound practices throughout the chain. It would give a competitive advantage to companies with a responsibly sustainable profile and produce a database of green companies.

Another initiative to consider is the development of environmental innovation hubs in countries along the BRI, which could provide opportunities in business-to-business (B2B), enabling the direct exchange of ideas. This would foster international partnerships and promote expertise. Since environmental challenges cross international borders, an online database with information on a national and regional scale could offer critical information, which is often a challenge for countries to collect independently.

Mr. Zhang Jianyu, CCICED special advisor, vice president and China Program director of the Environmental Defense Fund, made the following remarks:

The proposal of a green BRI is consistent with the Chinese notion of ecological civilization and is required to meet present challenges. This new concept will confront complicated situations because there are so many stakeholders. Yet the Green BRI Coalition is an excellent opportunity to bring together like-minded forces.

General debate and comments

This is an excellent opportunity for development, particularly for the development of poorer countries. But what must be avoided is the development path adopted during the industrial revolution. It will be critical in the early stages to invest in infrastructure, which implies an increase in emissions. The BRI energy needs could be supplied by a combination of wind and solar.

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Mr. Erik Solheim, CCICED vice chairperson and UNE executive director, shared these thoughts:

There is broad support for establishing the Green BRI Coalition, and there is a lot of interest in taking part in the organization. Concern has been voiced on the present BRI focusing too much on coal, and some have expressed the need for change.

Speakers have touched on the capacities of BR countries, noting that some have low ability in planning and program development. There was also a discussion on finance, making the essential point that green investment has not been fully defined. But there is also hope. In three weeks, parties will convene in Paris with some of the largest banks in the world to set global standards for green banking.

Mr. Li Ganjie, CCICED executive vice chairperson and MEE minister, closed the forum with these comments:

The BRI needs to be green; otherwise, it will not be successful. A green BRI can help us realize the 2030 SDGs and assist countries and regions encompassed by the BRI. China and the UNE are launching the Green BRI Coalition to promote shared prosperity and development of the surrounding countries.

The roles are clear: China's government is to provide guidance, companies are to assume their responsibilities, and financial institutions are to help translate the green BRI notion into reality. BRI policies should be consistent and also support established standards and guidelines for financing and investment. Environmentally committed corporations should be chosen to implement infrastructure projects.

b. Forum 2: Addressing Climate Change through Innovative Development Pathways

Mr. Xie Zhenhua, CCICED vice chair and China's special representative for Climate Change Affairs, co-chaired this forum and opened with the following comments:

Innovation is one of the keywords for this AGM. Innovative financing and policies are required to tackle climate change. Since the Paris Agreement, climate change has attracted much attention, along with the global realization of a shared destiny. Countries need to accelerate collaboration and joint efforts to realize the goals of the Paris Agreement and the UN Framework on Climate Change.

President Xi Jinping keeps saying that meeting climate change requirements must begin within one's own country. In China, we have taken proactive measures to deal with climate change and explored a green, low-carbon pathway that embraces recycling, improves efficiency and reduces the production of fossil fuels. We are also optimizing our energy mix and increasing our carbon sink capacity. These efforts form a major part of China's NDC.

Overall, China is achieving its three-year targets and has proceeded with south-south cooperation efforts. We have initiated development cooperation with 29 countries, and in some cases, started projects. This is part of China's NDCs as well as the commitments ***President Xi Jinping*** made in Paris. We will meet our obligations, but there is still much uncertainty and differences of understanding in global environmental governance.

At present, country commitments for dealing with climate change are not sufficient to ensure the protection of the environment and the livelihood and health of humanity. There is a need for greater consensus among the global community on fighting and mitigating climate change.

Mr. Achim Steiner, CCICED vice chair and administrator of the United Nations Development Programme (UNDP), made the following remarks:

China has been like a movie on fast-forward when it comes to enhancing standards, norms and targets. Still, the IPCC's latest report is troubling because it is telling us the for the first time on this journey of uncovering the implications of climate change, we have almost passed the point of no return. The report states it would require superhuman efforts to contain the temperature increase to 1.5-degrees Celsius.

We are talking about profoundly different scales of innovation in food production, energy and transportation. We have to look at what we can do to accelerate solutions; this will determine success or failure in determining what happens next.

Innovation can involve the notion of co-creation – bringing to the table those who could be part of solving the problem. It suggests we broaden the circle of those who can apply innovation to finding new pathways.

It is necessary to move from looking for problems to finding solutions. This is an era where it is possible to find a return on investment on environmental action. China is now moving from pollution reduction and protection, to looking at the return on investment of its initiatives. It is no accident that half of the world's electric vehicles are in China.

Ms. Kate Hampton, international team leader of the SPS on Global Climate Governance and China's Role, and CEO of the Children's Investment Fund Foundation (CIFF), made the following remarks on the first session topic, Innovative Low Carbon Development Pathways:

CIFF is the world's largest organized philanthropy focused on improving the lives of children and is also a significant funder of climate work, particularly in China. CIFF has deployed $100 million to fund climate action so far because the organization believes climate change today is the biggest threat to the world's children and future generations.

The Paris Agreement was a success in terms of reaching an international agreement, but greater ambition is required. There has been an alarming leadership vacuum in a number of countries.

China has overtaken other countries in renewable energy, electric vehicles, and co-management of air quality. People tend to think of innovation as technology, but financial, governance, policy, and consumer innovation are areas where innovation is required.

In China, there is interest in people's ideas on how to reduce coal consumption, and at the same time how to support provinces that are dependent on coal for growth and jobs. As the world's largest producer of air conditioners, China has an opportunity to lead, both in domestic and export markets, but how can this be encouraged? There is also a need to consider how state-owned enterprises and industry could play a more active role in the energy transition.

Mr. Zou Ji, Chinese team leader of the SPS on Global Climate Governance and China's Role, and president of the Energy Foundation China, talked about China's innovation efforts. He made the following comments:

Looking back at the last 50 years, it is clear that countries have taken different development paths. Countries with higher incomes – Canada, U.S., Australia – experience higher per capita emissions. In Japan, with the same income levels, per capita emissions are only 50% of the United States.

If China cannot reduce its carbon emissions, this will affect the world. According to China's Energy Bureau, natural gas should account for 15% of energy by 2030.

There are also plans to better manage coal and potentially phase out thermal power plants and move toward renewables. The shift out of carbon will be a significant economic driver for China and will bring strong market demand. China needs robust policy infrastructure and to restructure its energy mix, transportation and land use.

Mr. Jonathan Pershing, program director of Environment, William and Flora Hewlett Foundation, made the following remarks in his keynote talk:

It is critical to focus on industry as a significant part of both Chinese emissions and the global development agenda. Industry plays a major part in China's development and represents an enormous share of the economy. China produces roughly half of the world's steel and cement; whatever China does to cut greenhouse gas emissions has a global impact. In addition, much of the technology being developed in China has an impact in Africa, where China builds infrastructure and industry.

The life cycle of steel goods can be increased. Globally, there is 65% recovery of steel, yet that could increase to 90%. Waste recovery targets and segregation of metals by content could also be increased. Deconstruction, instead of demolition, could be adopted.

China is still building new steel mills, offering a unique opportunity to increase efficiency. China is leading in many areas, but in the area of decarbonisation, more needs to be done.

There will have to be greater coordination across ministries, especially those with a mandate for the energy sector. Given the industrial use of coal, the industrial sector needs to be actively engaged in alternative-energy choices.

Mr. Zhao Changwen, director of the industrial economy department of China's State Council Development Research Center, emphasized the following points:

There are still questions on what the optimal carbon price is to drive emission reductions, and what are the best integrated assessment models to calculate the cost of reducing carbon emissions. Technological advances will be realized, stimulated in part by public policy and the impetus of creativity. A breakthrough on batteries for electric cars is highly likely.

Mr. He Jiankun, director of the Low Carbon Economy Lab at Tsinghua University and former executive vice president of Tsinghua University, made the following comments:

When discussing how to tackle climate change, it is usually assumed that the global ecological crisis calls for innovation. The situation is urgent and required countries to work together. For the second half of the next century, we need to reach zero emissions, which will be difficult to achieve. Technology and global cooperation are essential to meet the challenges ahead.

There must be an intensification of innovation, not only in technology but also with institutions around the globe. It will be essential to impose top-down government policies to encourage the shift to the new economic development model. Countries need to implement carbon-pricing in order to stimulate the transformation of carbon technology.

Mr. Manish Bapna, executive vice president and managing director of the World Resources Institute, made the following remarks:

There are signals of momentum, particularly in the private sector. Over the past year, 500 companies have signed up for science-based targets. There are now over 150 major companies that have committed to procure 100% renewable electricity, and multi-national companies are talking about switching their fleets to 100% electric vehicles (EV).

Even in the U.S., climate action momentum has surged. The markets are starting to shift, but a more decisive transformation is needed, which is why the International Panel on Climate Change (IPCC) report is so important. Its key messages are every 10th of a degree matters; there needs to be systems changes across all major sectors; mitigation is not sufficient, and there needs to be investment in carbon-removing technologies. With every passing year, the climate-action economic case strengthens.

Momentum is stifled by barriers that prevent greater action. Existing economic models present important challenges, including underestimating the uptake of new technology such as EVs.

Carbon pricing is a necessary, though not a sufficient condition. In 2004, only 1% of emissions were covered by some carbon pricing scheme; in 2005, this increased to 20%. To be effective, carbon pricing must be high enough.

In every country, the challenge is how to ensure a just transition; innovative approaches are emerging. Norway and Germany have commissions to manage the transitions.

Mr. David B. Sandalow, inaugural fellow, Center on Global Energy Policy and co-director of the Energy and Environment Concentration, School of International and Public Affairs at Columbia University, spoke next. Here is a summary of his remarks:

China is indispensable in the fight against climate change, not just because of the volume of its emissions, but because of the economic development model China provides for much of the world, particularly in terms of poverty reduction. China's BRI actions are tightly linked to global action on climate change.

One of the most important lessons of the IPCC report is that innovation in carbon capture is essential to the success in fighting climate change. Countries can fully deploy renewable energy and transition the transportation sector to EVs, adopt all of the critical policies in the industrial sector to reduce emissions. While all this is possible, the reality is these actions are not sufficient to abate climate change. To succeed, innovation is essential. Fortunately, some of the necessary technologies are already in use.

Mr. Achim Steiner, CCICED vice chair and UNDP administrator, chaired the second session on Institutional Innovations in Climate Change Governance. He introduced Ms. Laurence Tubiana,

CEO of the European Climate Foundation, who made the following comments addressing institutional innovations in global climate governance:

Three years after the adoption of the Paris Agreement and the SDGs, the global community still has to work out its implementation by the end of the year. The ICPP report provides specific information and pathways.

The world needs to take a broader view of climate and what is required to address problems. It is essential to engage with stakeholders at all levels. Sharing information locally and internationally is needed in order to achieve the Paris Agreement goals. Greater ambition is also called for within the global framework to meet emission reduction targets.

The agreement's two mechanisms to realize this are periodic revision of NDCs and long-term strategies; non-state actors need to be involved in the process and solutions.

China has played an essential role in the success of the Paris Agreement and must call for higher ambition at the global level. It is vital that investment be siphoned from coal to clean energy, but more is required. The implementation of a long-term green finance strategy to align private and public finance to solutions is also essential.

Mr. Wang Yi, standing committee member, National People's Congress of China, as well as vice president of the Institutes of Science and Development of the Chinese Academy of Sciences, made the following points on China's restructured cabinet and innovations in climate governance:

China adopts five-year plans, which include mandatory targets. The government adopted the policy to include climate change in its laws even before the Paris Agreement. Most recently, the responsibility for climate management was transferred from Ministry of Environmental Protection (MEP) to Ministry of Ecology and Environment (MEE) in order to ensure synergies between climate change and traditional pollutants and to create coherent supervision and law enforcement.

Coordination between the central and local governments has proved a challenge but is also essential to tackle climate change. The market must help China overcome challenges; a bottom-up approach will prove most effective in this transformation.

Mr. He Kebin, from the Chinese Academy of Engineering and dean of School of Environment, Tsinghua University, made the following remarks:

In China, we must consider how to use synergies as an innovation tool. In the past five years, China has implemented its action plan to control air pollution, and we have seen the benefits of sharing synergies.

The China Engineering Academy evaluated this effort and found that over the past five years, the PM2.5 dropped by 30% in all major cities. Forty percent of the decrease was from air pollution controls, 23% was the result of a change in the energy mix, and 17% was from changes made by industry.

Our energy sector has contributed greatly to China's efforts to cut emissions, in particular, the switch to black carbon from coal. The government announced a three-year strategy to eradicate

emissions in sectors including energy, transportation and through changing land-use. These efforts have to bear fruit in cities if China is to decisively tackle air pollution.

Ms. Ana Toni, executive director of Instituto Clima e Sociedade (iCS) Brazil, made the following comments:

Brazil has thought a great deal about the Paris Agreement and the benefits of this multilateral effort. China is Brazil's primary trading partner, with China importing more than 60-billion tons of Brazilian oil; this represents more than 50% of Brazil's oil exports. China also imports sizeable quantities of Brazilian beef, sugar, and other commodities.

Over the last two decades, Brazil has substantially cut its carbon emissions while lifting more than 10 million people out of poverty. Brazil has pledged to reduce 37% of its emissions by 2025, and 43% by 2030 – most of these targets will be achieved through land-use, stopping deforestation, replanting forests, and low-carbon agriculture.

In the face of Brazil's recent election, there are concerns over the country's ability to become a low-carbon country by the end of the century. Fighting climate change needs to come with economic and social development and bringing low-carbon goals to trade and governance discussions is fundamental. Government import strategies could support low-carbon agriculture and ensure products aren't connected to deforestation in Brazil.

In 2019, Brazil is to host the Climate COP, although it is as yet unclear whether or not Brazil will stay in the Paris Agreement. The UNFCC Secretariat and countries like China should demand that Brazil keep its commitments.

Mr. Javier Manzanares, deputy executive director of Green Climate Fund, made the following remarks:

Climate change is much more than rising temperatures; it is also about water, food, energy, health and security. Institutional innovation is urgently needed, and greenhouse-gas reduction should be considered a global good.

Today, people are burning fuels and generating nitrogen oxides and carbon monoxide on roads and highways, and this is not considered a punishable misdemeanor. We are trashing the planet, increasing emissions and still, there is no reckoning. For innovation to take place, the impetus must come from government.

Mr. Liu Jian, UN Environment (UNE) chief scientist and acting director of the Science Division, made the following comments:

Concerning mobilizing financial resources for mitigation of greenhouse gases, the investment on pollution control and clean-air technology must be considered. Air pollution is causing not only economic losses but severe health effects leading to more victims than the Second World War.

General debate and comments

The co-management of climate and air pollution requires the integration of all atmospheric components in analysis and policy-making. There needs to be more emphasis on methane and black

carbon because they are considered co-pollutants. This needs to be integrated in the overall analysis; these compounds belong to the same category of climate modifiers as CO_2.

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Since the industrial age, progress was fueled by carbon. It has created enormous benefits – poverty reduction, wealth and health. Now it is also destroying the planet. So, the system that gave us so much must be abandoned, which is a huge undertaking requiring innovation at the highest level, across sectors and institutions. It will be essential to 'think bigger' in creating new systems for the 21st century.

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Energy is critical to any climate change solution; focus is required on energy and institutional reform. Policies should be synchronized.

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How is it possible to address all priority issues and ensure we weigh these considerations correctly? Humanity is on a path to decarbonization and must overcome political, financial and social hurdles. How China brings government forces to bear and sends the correct signals to markets will be fundamentally important.

c. Forum 3: Post-2020 Biodiversity Conservation

Ms. Catherine McKenna, CCICED executive vice chairperson and Minister, Environment and Climate Change Canada, and Mr. Zhao Yingmin, secretary general of CCICED and MEE Vice Minister, co-chaired the forum. Minister McKenna gave the opening address:

Canada and China are two of the world's largest countries, and we have similarly diverse landscapes where iconic species such as grizzlies and pandas thrive.

Effective nature conservation across all of these landscapes is needed in order to safeguard biodiversity. China and Canada have signed a memorandum of understanding to work on China's national park system. Canada has the oldest national park in the world, the iconic Banff National Park. There is a shared commitment between China and Canada when it comes to protecting nature and our wildlife.

China has made incredible progress on the 2020 Aichi Conservation Targets, exceeding land protection targets. The Canadian government is doubling the amount of protected nature and oceans by establishing new protected areas like Tallurutiup Imanga, which represents 2% of the oceans we protect. Canada also announced a new indigenous protection area – a unique opportunity to work with indigenous people and reimagine how important spaces can be protected.

A recent twinning agreement between Canada's Jasper and Elk Island National Parks and China's Giant Panda National Park was announced; this supports the sharing of information on the establishment and management of protected areas.

China's rich biodiversity is a global treasure, and a well-managed park system will help secure them for future generations. Nations need to work together to develop a shared vision for a post-2020 biodiversity strategic plan.

There is considerable work to do in order to protect nature. The number of species that are at risk and the impacts on natural landscapes are significant. China can play an important role in the Beijing COP 2020. Global challenges require global solutions – with China's leadership and China's commitment based on science and evidence.

Clarity of purpose is required to succeed, along with an ambitious, measurable, and practical framework. Citizens, including young people, and business need to be involved in order to develop a clear nature agenda for everyone.

Close partners will work together over the next two years to strengthen the process of developing a meaningful post-2020 framework for biodiversity. The global community needs to act to protect nature and make the connection between climate, oceans and biodiversity.

Everything is connected – when we protect lands and waters, we protect biodiversity and species at risk, and we preserve lands that help tackle climate change.

Ms. Catherine McKenna chaired the first session on Mobilizing a New Partnership for Global Cooperation to Facilitate Multiparty Participation. She introduced her co-chair Mr. Zhao Yingmin, CCICED secretary general and MEE Vice Minister, who made the following opening comments:

The Chinese government has attached great importance to biodiversity conservation. China was one of the earliest countries to sign the CBD, shouldering its responsibilities and implementing conservation mechanisms. The 19th National Congress of the Communist Party of China has put forth the principle of harmonious coexistence of man and nature.

In a recent round of reform, China has established ministerial departments to strengthen the protection of biodiversity and has enshrined biodiversity into the constitution. Other actions include strengthening environmental protection and setting up ecological redlined protected areas. China has established systems to protect botanical gardens and breeding zones and has increased international cooperation on biodiversity.

China currently has protected more than 1.7-million square kilometres of wetlands; in total, approximately 18% of the country's territory is protected. There are hopes to see rare and endangered species populations recover. The giant panda has been removed from the endangered list, while the populations of tigers, Asian elephants, leopards and Chinese white dolphins are increasing.

Biodiversity is an important focus of research for the CCICED. As 2020 nears, the international community needs to hasten its efforts to meet targets and put in place measurable strategic plans for the post-2020 biodiversity conservation agenda. The CCICED's SPS on post-2020 biodiversity conservation will help China be better prepared for the COP 15 meeting.

Ms. Li Lin, SPS co-team leader and director of global policy and advocacy for WWF International presented a short video highlighting the connection between humans, animals and the planet. She made the following points during her remarks:

Social and economic trends point to an accelerating pace of change, while at the same time nature is rapidly losing out. This has not been high on political agendas. Elements of nature – climate change, biodiversity, land and sea use – are addressed separately, yet synergy is urgently needed in order to develop a cohesive response.

A collective response of all stakeholders, not just China, is required. There is only one planet. Efforts to reverse impacts must begin now, and the relevance of nature must increasingly be integrated into the political system to the highest level.

The turning point must happen by 2020, and the window of opportunity is closing. Nature could be a uniting factor in a global geopolitical landscape at this time of crisis. China has gradually become a leader through its ecological civilization concept. A common theme is required to bring the world together and develop a new type of leadership. With the Paris Agreement, France showed initiative and leadership. China now needs to find its own space in terms of global biodiversity governance.

China could consider developing its own domestic biodiversity network and call for a coalition of champions for nature to support CBD events in China. The key message is that all actors must be keenly aware that urgency, ambition, collaboration, accountability and action are called for.

Ms. Naoko Ishii, CCICED special advisor and CEO and chairperson of the Global Environment Facility, gave a keynote address on biodiversity conservation in the Anthropocene. She made the following comments:

Biodiversity is at risk. The world is losing species at 1,000 times the natural rate, which threatens our economic model. Nature has been considered an infinite asset that cannot be depleted, but biodiversity is even more in the red zone than climate change.

The Amazon used to be a carbon sink; it is now becoming a carbon source. Impacts are mostly related to agriculture, as the world faces a growing population. There are three areas on which to focus: how science is conveyed in order to capture the business community; how to build a compelling narrative that shows change is not only desirable but possible; and how to affect a system change through governance.

Mr. Dominic Waughray, CCICED special advisor and head of the Centre for Global Public Goods at the World Economic Forum (WEF), discussed biodiversity as a global risk. He made the following comments:

The WEF is actually a PPP hosted by the Swiss government with strong interconnectivity, which makes this a multi-stakeholder platform enabling action on biodiversity.

The WEF global risk report was written by financial risk managers – not environmentalists; they were asked to consider which are the most pressing out of 60 identified global risks. These specialists considered the impact and risk related to extreme weather events, biodiversity and ecosystem loss, and food and water issues.

These identified risks are now getting worse. People whose expertise is to analyze financial risks feel that politicians have the levers to manage these risks, through policies such as austerity measures. But structural risks related to environmental problems can't be dealt with in isolation.

The solution is a movement – business and non-business, underpinned by science. The new climate economy provides a good narrative; WEF created the meme: "More plastic than fish in the sea," which has had a significant impact because it captures people's imagination.

In a recent discussion with a business leader in New York, we heard about an exciting project in Senegal encompassing more than 100 kilometres of mangroves along the shoreline. This project demonstrates that if there is investment in the mangroves, then both fresh water and land are protected, and there is clean water available for the food processing sector. The mangroves also create a buffer again storm surges; infrastructure was better protected by mangroves than by dikes. Another benefit is that mangroves create healthier fresh and salt water habitats for fish. Surrounding communities experienced better fish catches.

Finally, mangroves are an excellent carbon sink, so the initiative can be financed through voluntary offset markets. This is not just a biodiversity project but an investment in nature.

Mr. Zhao Yingmin chaired the second half of the forum on How to Set an Operable and Achievable Framework for Post 2020 Biodiversity Conservation. He introduced Mr. Ma Keping, SPS co-team leader, professor at the Institute of Botany, Chinese Academy of Sciences, and chair of IUCN's Asia Regional Members' Committee, who made the following remarks:

It is urgent to consider how to implement the CBD's 2020 targets because the convention is weak in this area. Signatories have not made significant efforts. The SPS is developing a system that would track the status of signatories' commitments. Scientific support and data services will be required to ensure goals are reached. The CBD data mapping focuses on critical areas, so stakeholders can assist the Secretariat to track the implementation of plans.

Ms. Inger Andersen, CCICED Member and IUCN director general focused her remarks on China's red lines for ecological protection and the role this can play in biodiversity conservation. She highlighted the following points:

The opportunities of the year 2020 are critical – either the global community achieves an agreement at the CBD COP, or it fails. The CBD is critical, but it is not a mainstream concern; there will only be a more substantial society-wide buy-in if people around the world realize biodiversity is essential to their wellbeing. There needs to be a clear connection between biodiversity and food security, trade, safety.

The challenge is to define an apex target that countries and cities can measure themselves against. This target must be scientific, bold, measurable and clearly feasible. This target could involve the stabilization of species, genetic diversity and ecosystems – all trends which are objectively measurable and can work for countries, business and other non-state actors.

Addressing the commitment gaps is essential because people will buy in if there are clear outcomes tied to the targets. Today, countries subsidize pesticides, insecticides and fertilizers. Perhaps different incentive systems are necessary to subsidize biodiversity positive ecosystem services, including pollinators, water and wetlands.

Mr. Gao Jixi, SPS co-team leader and director general of MEE's Satellite Environment Centre as well as director of the Technology Expert Committee of China's Ecological Conservation Redline, Ecology and Environment, made the following comments:

Coordination is required among economic and social development and ecological protection. This would allow countries to achieve a balance. In considering the establishment of national parks, drawing ecological redlines around the area will ensure appropriate protection. Some areas need balanced development, making them difficult to protect. Other areas can be set aside to ensure there is no urban development. China takes a holistic approach to planning cities and protected areas, ensuring all levels of government are involved.

Mr. Art Hanson, CCICED international chief advisor and SPS co-team leader, chaired the discussion panel. He introduced Jack Hurd, regional managing director for The Nature Conservancy (TNC) in the Asia-Pacific region, who made the following remarks:

TNC has been involved in protecting land and water for more than 60 years. The present crisis calls for acting with a greater sense of urgency, balancing the notion of inspiration with practical applications, and engaging a broader cross-section of society. The recent IPCC report highlights the stakes and implication of inaction on natural systems.

The idea of setting a bold apex target is important, and there is also a need for a suite of inspiring objectives, robust and transparent monitoring and evaluation, and investments in the enabling conditions that support success.

TNC believes the responsibility for biodiversity has been vested with single industries and is insufficient; a whole-of-government approach, including planning and finance, is required.

Government must create regulatory frameworks, underpinning collaboration with private agencies. Large-scale individual plans can generate positive outcomes for biodiversity, and offset impacts, while also bringing about regulatory certainty and reducing risks and costs. There is also an important, positive role for financial institutions.

Mr. Malte Timpte, expert in international environmental politics and science-policy interfaces with the Institute for Biodiversity Network in Germany, made the following comments:

It is vital to have platforms to exchange ideas on biodiversity. The 2050 vision of the current strategic plan is going beyond; the post-2020 framework needs to address all three objectives of the CBD, which is conservation, sustainable use and benefit sharing. This is needed to guide governments to change policies and regulations, but also to encourage people to change their lifestyles.

The development of voluntary national commitments must not limit the ambition of global biodiversity targets; these need to go beyond the present status and strive to meet global baselines and use indicators that must be in place by 2020.

Mr. Le Zhi, Peking University professor, made the following remarks:

The CBD's lack of quantifiable targets and measurable processes has been discussed; the CBD has been criticized for including unachievable targets, when in fact the targets aren't clear enough. The SPS needs to help develop quantifiable indicators with clear roles and responsibilities and take global trade into consideration.

How to engage developing countries must be considered. Incentives will have to be developed, some of which will inevitably be financial. Raising funds and developing market mechanisms to create incentives will be essential. This involves a systematic change in the economic system.

Bottom-up change is important and requires citizen engagement. Examples include the Tibet Autonomous Region, where animal protection is essential to the largely Buddhist population, and Peking University, where 18 species of birds cohabitate with thousands of students, proving that small land spaces can be shared between humans and wildlife – if protection is a priority.

Mr. Rodolfo Lacy, director of the OECD's Environment Directorate, emphasized the following ideas:

The OECD is tracking the relevant taxes for biodiversity and official development assistance. ODA grew at a rate of 3% over the past two decades, but only 6% of the total amount is dedicated to biodiversity. The world needs a new economy for nature, and this will require resetting markets. To track financial flows, the OECD requires clear and smart indicators; there are attempts to simplify the ones in use at present. The approach needed is an ecological rather than a geographic one. Scientists talk about species evolution; this requires the introduction of progression concepts in our work.

The first priority is to protect all ecosystems with indigenous species, then the progression is to ecosystems with endemic species, and finally to the set-up of protected areas, with built-in connectivity, which is challenging. To measure connectivity, land-use systems must be quantified.

Mr. Zhai Qi, CCICED special advisor and executive secretary of the China Business Council for Sustainable Development (CBCSD), made the following comments:

Corporations are increasingly aware of the need to protect biodiversity and to restore and preserve natural systems. Environmental protection needs to be incorporated into biodiversity strategies, to develop solutions to restoring natural systems and conserve biodiversity.

The CBCSD has partnered with Natural Capital Alliance to assist the Chinese government and enterprises align strategic development and environmental protection. Since 2013, China has enacted more regulations on environmental management. The CBCSD is also expanding its partnerships with the Chinese government so targets on biodiversity protection can be reached.

Mr. Dimitri de Boer, CCICED special advisor and chief Representative of ClientEarth China, made the following comments:

China could appoint a special envoy for biodiversity who would be the point person on this issue. Additionally, Chinese law enforcement should continue to ramp up enforcement and prosecutions, looking overseas for ideas on how to make further progress. Killing endangered wildlife often falls under international organized crime. The EU is working hard on this issue, and China could work with the EU to make progress. That global link is important.

In terms of protecting habitats, it must be recognized that a lot of China's protected areas are what is referred to as "paper parks" – these areas are not protected in reality, only on paper. Drone surveillance could help with the protection of these parks. Anyone thinking of doing something illegal would think twice if there is an "eye in the sky".

General debate and comments

We know that investing in biodiversity provides a significant return. There is a need for transformational change at a systems level – a new deal for nature, with decade-long science-based targets. Conservation, restoration, transformation and stronger collaboration with the private sector are essential. The narrative of what is realized must be communicated more effectively.

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2020 will be a critical year. At present, the CBD has a lower profile than climate and other development goals. We can expect China to perform extremely well in hosting this event, but more importantly, China can demonstrate that biodiversity conservation into the 21st Century is mission possible. China has already done much in land-use planning and other forward-looking initiatives. Biodiversity is a confusing word – perhaps 'healthy planet' is a more useful way to convey the idea. If we have a healthy planet, biodiversity is a consequence. Still, the world community can expect to witness massive extinctions.

Co-chair Mr. Zhao Yingmin made the following comments in his summary:

There is much work to do from COP 14 to COP 15 in order to welcome 2020, including drafting more measures and targets to ensure the protection of biodiversity. Participants provided solutions to improve communication and engaging stakeholders and partners.

Greater attention must now be paid to endangered species, and biodiversity concepts must be communicated to the public. Biodiversity is invaluable to humanity – as the WWF video showed earlier, we are all connected.

Ms. Catherine McKenna closed the Biodiversity forum with the following comments:

A positive narrative is needed, whether it is living in harmony with nature, one healthy planet, or a new deal for nature. It needs to capture the imagination and engage people. There was discussion today about the necessity to define an apex target that businesses can champion and that would drive accountability, allow for gap analysis and increase ambition.

Success requires political leadership and a whole-of-government approach that mobilizes youth and non-state actors. Broad public engagement is required – from the financial sector to citizens. The concept of ecological civilization is useful as the world community moves forward.

d. Forum 4: Environmental Governance for the Ocean

CCICED vice chairperson Mr. Vidar Helgesen, special envoy to the High-Level Panel on Building a Sustainable Ocean Economy and Norway's former Minister of Climate and Environment, co-chaired the forum with Mr. Su Jilan of the Chinese Academy of Science and honorary director of the Second Institute of Oceanography of China's State Oceanic Administration.

Mr. Helgesen opened the forum with the following remarks:

Possibly the most significant negative impact on the ocean comes from climate change, which is drastically affecting biodiversity and ecosystems. The global community is realizing the value of better ocean governance, management, sustainable fishing, and measures to mitigate climate change.

Yet pollution remains extremely serious and is exacerbated by climate change. For example, more plastics are being flushed into the ocean as a result of extreme weather. The issue of ocean health also has a huge impact on economic outcomes – marine flooding caused by climate change has been calculated to cut 9.3% of global GDP.

There is great promise for the economy if we can regenerate ocean ecology. Taking an integrated approach to managing oceans and environmental problems will allow humanity to stand a better chance of improving ecosystems and economic outcomes.

Co-chair Mr. Su Jilan made the following remarks as he presented a slide show:

The Oceans SPS team is mapping the problems of China's oceans and their causes. The team is documenting national and international initiatives and provides the government with suggestions on how China can contribute to ocean health.

There are task teams in the SPS focusing on ecosystem-based marine management, biodiversity, marine pollution, green marine operations, renewable energy and mineral resources. The team is also integrating cross-cutting issues, such as the economy.

The SPS will be offering suggestions on regional and global issues where China can lead, primarily related to the BRI, and where China can share with other countries on ocean management experience.

Mr. Helgesen chaired the first session on Solutions and Actions for Marine Environmental Governance. He introduced CCICED member and Oceans SPS team leader Mr. Jan-Gunnar Winther, specialist director of the Norwegian Polar Institute. Here is a summary of his remarks:

Too much development is going on everywhere, and there must be a greater understanding of how one sector affects the others. It is essential to get the net outcome of all activities optimized holistically, and for this, solid science is required. No part of a society develops productively without competent research. The SPS must ensure it backs every conclusion on the best evidence available.

Greening the BRI will give China the chance to influence countries positively; it could also enable China to connect with companies and governments that are developing sustainable solutions. Partnerships are critical to accomplishing these goals. Trust and engagement, at the local and national levels, are essential for the success of realizing the SDGs.

Mr. Cai Meijiang, deputy general manager, COSCO Shipping Specialized Carriers, CO Ltd., spoke next. Here is a summary of his comments:

As an ocean shipper, COSCO considers various risks, such as geopolitical and other factors. If people's awareness of compliance and legality is not high, this is assessed as a risk. COSCO is of the view that government plans related to the ocean are useful in some respects, but the support structure for implementation is insufficient, which poses problems for companies.

For instance, if COSCO dispatches a ship to the Yangtze River Delta, we are now required by law to use low-sulfur oil, but we run into difficulty if we cannot source this oil from the market.

Mr. Xu Honglei, director of the Environment and Resources Research Division of China's Transport Planning and Research Institute, made the following comments:

China's agriculture has a history of rapid development with a lag in pollution control and environmental governance. It is vital for China to take measures, especially at this moment.

Agricultural pollution may not seem as high as industries, but when farm operations are highly concentrated in certain areas, this can cause serious issues.

The SPS is coming to the conclusion that China needs robust legal protections to ensure ocean sustainability. These measures could include laws, enforcement, monitoring, technology and established standards related to controlling agriculture pollution, including waste discharge.

Mr. John Mimikakis, member of the Oceans SPS and vice president of Oceans, Environmental Defense Fund, made the following remarks:

The SPS grappled with a significant challenge: How to feed nine billion people by 2050 without destroying the ocean? Climate change will make this challenge even more urgent, especially for developing tropical countries which are expected to be hit especially hard.

One answer is aquaculture, which also faces challenges. Wild fisheries, if managed well, can increase production, but at present, one-third of global fisheries are over-fished. There are pressing questions on how to protect ocean biodiversity.

How can wild fisheries be revived and become climate-resilient? Countries individually can take the initiative to solve this problem and protect ecosystem functions. If these questions are answered, a solution can be found to feeding nine billion people.

The SPS is calling for strengthening the laws on habitat protection and a national plan of action to restore ecosystem services. Also recommended is an ecosystem health report card that can bring scientists together and evaluate how China is doing holistically.

General debate and comments

One of the challenges in China, as elsewhere, is devising ways for multiple experts to work together. Another concern is scale – having more space makes it easier to find solutions.

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The Chinese government is currently implementing several initiatives to enhance conservation, including environmental inspections by government agencies.

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At present, 4.1% of China's marine areas are protected; the government's target is to see this rise to 5% by the end of 2020, still a far cry from the SDG target of 10%. However, China has developed an ambitious plan for 2030 and has taken serious measures to protect the marine environment. •

Mr. Su Jilan chaired the second session on Marine Land-based Pollution and its Impacts. He made the following remarks:

Oceans are the very foundation of human life; they provide much of what we need to survive, including oxygen. They are also crucial to economies. But we have pushed oceans to the limits. One of the major issues is marine pollution around the world.

Areas of concern for ocean health include nutrient pollutants from land-based activities, plastics, and emerging pollutants — hypoxic (low-oxygen) zones in the world's oceans and large lakes; this is caused by excessive nutrient pollution from human activities that deplete the oxygen required to support most marine life.

About 80% of marine debris enters the ocean from land; 60%-80% of this mass is plastics, which break down into tiny particles and can now be found everywhere. Plastic in China is relatively new. Forty years ago, China had little plastic, which means China has a medium to low level of microplastics compared to other parts of the word. The two sources for microplastics is cosmetics and landfill breakdowns, which eventually end up in the ocean.

Mr. Wu Xinyi, student at Tsinghua University's Summer Institute for China's Green Innovators (SICGI), made the following comments:

At the university, I am on a team that is working to deal with marine plastic pollution management. Microplastics are so small that they can enter the human body. We have already found evidence of microplastics in shellfish and fish, but also the feedstock of the fish. We are researching the impacts and risks of microplastics.

About 80% of the plastic enters the ocean through waterways, and 20% of this comes from litter. Once in the marine environment, it is costly to extract the existing plastic stock from the waterway. SICGI is working to propose less expensive ways to remove this litter.

This team is also working with fishermen to ensure their operations don't add to plastic litter, and that they are paid to help remove plastics they see. The critical issue is to incentivize the fishermen to keep the garbage they generate or find while fishing.

CCICED member Mr. Félix Poza Peña, chief sustainability officer of Inditex, made the following comments:

Inditex is involved in various initiatives to reduce the impact of marine pollution, including incorporating a recycling system, utilizing recyclable materials, and a partnership with a Spanish university to look into how to reduce the number of microfibres.

We have to consider the question, where is the global solution? Trust is a new currency in determining solutions. As a company, Inditex is committed to finding solutions and open to help.

Ms. Victoria Pollard, first counsellor at the European Union Delegation to China and responsible for Environment and Climate Change, made the following points:

The public is looking to governments and companies to act. The EU has supported research on marine plastics and adopted a range of different policy measures. Since 2015, the EU has put in place a circular economy action plan.

The EU has revised its waste plan to improve the economics of recycling, and earlier this year a plastic strategy was introduced to deal with the environmental impact of plastics and develop a sustainable industry for the future.

This strategy has 39 different actions, including revisions of waste legislation. The aim is to curb plastic waste, but it's also about improving the economics and quality of plastics so that they can be recycled more easily.

On waste packaging, the role of extended producer schemes is essential, and the EU has worked to refine these. There are specific measures for microplastics. Fifty-percent of litter found on EU beaches is single-use plastics, and the top-ten, single-use plastics represent the bulk of that waste.

Many of those materials, such as plastic bottles and cutlery, can be replaced with greener alternatives, and our plan calls for those materials to be banned. For those plastic materials which have no alternative, there will be awareness campaigns and efforts to work with producers to mitigate issues.

The proposal was adopted in the European parliament last week, with a massive vote in favour. These efforts require a holistic approach with multiple partnerships.

Mr. Li Daoji, director of the Marine Plastic Research Center at East China Normal University, spoke next. Here is a summary of his comments:

Marine pollution and microplastics need to be dealt with urgently in China. Recent research results show that the growth of plastic pollution has slowed since 2011. The year 2017 was a turning point for the drastic reduction of plastic waste into the waterways of China, largely due to government policies and measures. The recent foreign garbage ban has also helped.

China should formulate specific policies and measures for the control of plastic waste, and strictly enforce laws and improve the management of garbage collection in cities. It should also encourage more environmentally friendly plastic products and impose restrictions on single-use plastics and packaging.

Ms. Lisa Emelia Svensson, member of the Oceans SPS and coordinator of UN Environment's Marine and Coastal Ecosystems Branch, made the following points during her remarks:

When discussing the health of the oceans, other issues besides plastics need to be considered, such as antibiotics. When holistic approaches and governments are mentioned in the context of this discussion, it is important to state that the most critical connection is between land and ocean.

Almost 80% of people in the EU are concerned about the environment and how it impacts their health. The link between ocean, health, energy and the food sector must be considered. Companies ask that governments come up with standards and regulations.

It is important to weigh a global ban on plastic versus local prohibitions. There is interest in a soft approach, collaborating with business, which could expedite the process. A legally binding approach with the government will take at least ten years, and there could be twice as much plastic in the ocean by then.

The SPS is midway through its research plan. We see improvements and innovations throughout Asia, but strong government leadership is still needed to push these issues to the top. Perhaps China needs to start a war on plastics. The SPS has also discussed a potential tax on plastics.

Mr. Wang Juying, senior scientist and deputy director general, National Marine Environmental Monitoring Centre of the State Oceanic Administration, made the following comments:

Oxygen levels are hitting a critical threshold, and there is a strong connection between red-tide outbreaks and low oxygen. Since the 18th Party Congress, China's government has taken many environmental protection measures, including a water pollution prevention action plan, to protect marine ecology.

China is in the process of enhancing protections and carrying out cleanups, engaging in 290 restoration projects and cleaning up 260 stretches of coastline. China is also controlling the pollution from coming into waterways and is shifting from a collaborative model to a holistic approach.

General debate and comments

China's waste-management ban is very much in line with the push to the circular economy in developed countries, but perhaps it would make sense to support better waste management in countries neighbouring China – especially those that may now be importing the waste that China is no longer accepting.

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Norway has introduced a program called "Fishing for Litter," which enables fishers to deliver plastic waste to shore for free. Traditionally, when fishers got plastics in their gear, they threw it out. If they did bring it in, they didn't know where to put it. There are some indications that fishers see less plastic because of awareness.

Mr. Jan-Gunnar Winther closed the meeting with the following comments:

Humanity is facing dramatic planetary challenges – climate change, pollution, the need to feed a growing population. These may spark new possibilities to achieve a sustainable ocean economy.

e. Forum 5: Innovation-Driven Green Urbanization

Mr. Liu Shijin, CCICED Chinese chief advisor, and Mr. John DeGioia, CCICED member and president of Georgetown University, co-chaired this forum. Mr. Liu Shijin moderated the first session, Innovation in Green Urbanization: Challenges and Pathways, and opened with the following remarks:

China has worked on urbanization for many years and come up with innovative green technologies, solutions, mechanisms and designs. The concept of green urbanization needs to be further promoted in China.

Mr. Zhang Yongsheng, CCICED special advisor and deputy director general for development strategy at the Development Research Center of China's State Council, made the following comments:

By 2035, 72% of China's population will live in urban centres; this will reach 80% by 2050. How can China manage 300-million people living in urban centres in a way that is green and environmentally sound?

Urbanization needs to be redefined beyond the concept that evolved during the Industrial Revolution. Public transportation, communication and logistics need to be expanded. The government needs to change public services and utilities and provide measures such as passive green housing, innovative water treatment, and waste-disposal facilities.

Traditional concepts of urbanization involve people moving from the countryside to the cities and shifting from agriculture to industry. But the countryside cannot be left behind, as it offers emerging economic opportunities and immense ecological value.

There are key challenges to achieving further green innovations. Developing countries are not familiar with the concept of green urbanization. This calls for a new mindset coupled with green technologies.

Mr. Li Xiaojiang, former head of the China Academy of Urban Planning and Design, underlined the following during his remarks:

Rejuvenating urban centres is a priority for planners in China. Some 58% of China's pollution in metropolitan areas is generated in peri-urban townships and counties as opposed to urban centres, which makes China's urbanization different than most other countries.

China is continually developing sustainably designed cities. From 1990-95, the Chinese government realized it needed to allocate more land for urbanization, with little consideration for the environment.

After the 18th CPC, China changed its development strategy, but accumulated pollution issues will not be resolved overnight. There also needs to be progress in construction standards and in transportation. In many areas, urbanization is fragmented and irrational.

Last year, during the CCICED's discussions on sustainable development, participants realized there are no long-term assessment criteria, which implies an insufficient focus on the future. It is imperative to reduce future costs and create synergies between government and civil society in order to achieve sustainable development with whole-lifecycle assessments.

Mr. John DeGioia, CCICED member and president of Georgetown University, made the following comments:

A few days ago, the UN marked the annual World Cities Day, to promote cooperation between countries as they face the opportunities and challenges of urbanization. Universities have a critical role to play in supporting a more sustainable future. It is generally acknowledged that rapid urbanization will have a significant impact on global environmental change.

More than half of the population lives in cities, and another 2.5-billion people are expected to join them by 2050. Cities consume two-thirds of the world's energy and account for 70% of greenhouse gases, yet urban centres occupy less than 5% of the world's land mass.

China has a goal of having more than 60% of its population living in cities by 2020. Innovation in infrastructure and technology in urban environments can be transformative. According to the New Climate Economy report, greenhouse gas emissions could be reduced by up 1.5-billion carbon dioxide equivalent annually by 2030 by changing transportation systems in the world's 700 largest cities.

Imagination-fueled change can help ensure rapid urbanization can support green development in ways that strengthen our ecosystems and foster resilient environments.

China has set out its development path as the construction of 'ecological civilization,' which implies vital political and societal links. The term is also philosophical in nature, reflecting humanity's need to respect nature.

Mr. Ying Lowrey, professor at Tsinghua University, made the following remarks:

China's urban development has sacrificed the needs of farmers, who don't see some of the same benefits as those who live in cities. The majority of people define green urbanization as solely about the environment, but this must encompass human beings. Green urbanization covers education, livelihoods, health care, and the dignity of the residents in rural areas.

Some have argued that urban centres must be 'greened' in order to protect the environment, but cities should not be the only focus. There must be green living in rural villages. China has countless examples of poor villages that developed into highly advanced towns with cutting-edge industry. Ultimately, government and markets will drive green urbanization.

Mr. Lin Jiang, member of the Green Urbanization SPS and professor at the U.S. Lawrence Berkeley National Lab, made the following points during his address:

I attended the Montreal Protocol in the 1980s when China launched into the air-conditioning industry, a market it dominates today. Recently, a proposal has been submitted that will offer the AC industry the opportunity to reduce emissions.

AC is the fastest-growing appliance globally, accounting for 40% of a household's energy consumption in the summer months. China is a significant manufacturer and consumer of AC and plays an essential role in global-cooling innovation. As the world develops, the growth rate of AC will only increase. We need to improve AC technology to make it more efficient – which does not imply the technology will be costlier. As energy efficiency rises, the price drops thanks to innovation.

It is important to reflect on the policies that can drive the improvement of AC in China. The plan is to increase the market share of highly efficient AC by 2050. The SPS has a good scheme for long- and mid-term development to promote innovation in AC and to reduce its cost.

Mr. DeGioia chaired the second session on Innovation in Green Urbanization: Sustainable Water Management and introduced Mr. Hans Mommaas, CCICED special advisor and director general of PBL the Netherlands' Environmental Assessment Agency, who made the following comments:

Urbanization, innovation and greening the environment are broad concepts that are being redefined. The Netherlands has seen changes to lifestyles in the 1960s with the spread of car ownership. It was

expected that digitalization would alter the way people live, but there has been little impact to date. Instead, cities are growing.

Innovation may drive green urbanization, but perhaps it's the other way around: greening a city and having sustainable water management could actually drive innovation.

In the Netherlands, where space is scarce, nature is used to create multiple benefits and address various challenges. In the City of Rotterdam, Dak Park, or roof park, provides flood protection, water retention, clean air, healthy relaxation, connectivity, and education services regarding food production and biodiversity.

Nature-based solutions provide healthy options for cities and improve the quality of life. In many European cities, solutions that offer multiple benefits are the default. Cities have daunting challenges, but considerable opportunities to create change. Cities continue to grow, which is good because density goes along with increased efficiencies. The electric car won't save us, but public transport, spatial planning, and walking and biking will.

Mr. Qiu Baoxing, CCICED member and counsellor of the State Council and China's former Minister of Housing and Urban-Rural Development, made the following remarks:

Cars are the main factor impacting air quality and the second-largest contributor to CO_2 emissions. China's Ministry of Transport used to invest heavily in highways, but if they had invested better in public transportation, we would have better-planned cities.

China also has a high level of dependency on foreign oil; it is imported in large quantities, which affects the overall global energy mix. It's good news for the world's oil producers, but not good for energy conservation.

China must focus on transportation as a critical area, but it must also look to broadening biodiversity protection. The per-capita area of arable land in the U.S. is 15 times that of China. The blind expansion of cities must be stopped. A key feature of green urbanization is policies that support densification. China should encourage shared mobility such as bicycles; public transportation must be diversified and enhanced.

Mr. Manish Bapna, CCICED Special Adviser and executive vice president and managing director of WRI, made the following points during his address:

The stock of global infrastructure in the world will double in the next 15 years; global GDP will come close to doubling, and urban pollution will also rise in the next 30 years.

This is a critical time when choices made today will profoundly affect the future of the planet. People's behaviour in cities will determine whether humanity can limit the temperature rise to 2 degrees. As the world becomes more prosperous, cities grow; high-income status is always accompanied by high urbanization rates, but this comes at the expense of greater income inequality and transportation challenges, among other challenges.

It is important to consider how urbanization's positive economic benefits can be leveraged while mitigating environmental impacts. Discussing urban growth can help us define what makes for

good densification. Cities need assistance to harness innovation, reduce infrastructure spending and mitigate against other impacts, in particular, climate change.

As cities become denser, they also become more carbon efficient. Particular consideration must be paid to the modes of transportation adopted; the costs of car transportation are huge, and this represents a fundamental choice for China. Most of the current conversation is around EV, but there must be an increasing focus on increasing access to public transportation.

Water is vital to cities. An important choice is between investing in green water infrastructure, protecting the upstream catchments, or in grey infrastructure. In many cities around the world, water stress is now severe and likely to get worse. In Xiamen, Fujian province, there was an effort to desalinate sea water in order to generate more fresh water. But the cost is relatively high due to the energy required for the process; it is more cost-effective to improve the recycling of wastewater.

Considering the dominant paradigms of societies and markets, the conclusion emerging is that this is no longer working. A new model is needed, which is why China's next steps in this area will be extremely important and set the example for other nations around the world.

Mr. Wang Yachao, CEO of Zenity Environment, emphasized the following points:

Increased efficiencies are needed to face the challenge posed by green urbanization, namely increased pollution and vast amounts of wastewater discharge. While access to water may not be an issue for citizens of major cities, this certainly occurs in suburban clusters. Many rural areas have no wastewater management, which results in poor water quality.

Public awareness and media attention need to be focused on necessary actions in the areas of the environment, development and water management. More capital is required, particularly government funding, to make the needed improvements in urban water and air quality.

This company works in towns and villages with severe pollution, where people live in poor communities. Greening opportunities need to be available for all areas, so the quality of life can improve for all.

Mr. Robert Moseley, director of TNC's Asia Pacific Cities Program, made the following comments:

China's 'sponge cities' are probably the most significant urban green structures in the world. These are early days yet for this form of urbanization, but the scale achieved so far is unimaginable to many governments in the west. This is the scale required now. There will be lessons in the Chinese experience for the global community to study. A 'sponge city' has the capacity to mainstream urban water management into urban planning policies and designs.

General debate and comments

In Beijing, water is used to superficially 'clean' pollution or water the ground, which is wasteful. This issue should be addressed in order to save this scarce resource.

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Urban sprawl is serious in China. Cities are extending their physical boundaries, without clear ideas on the ultimate goal of urban development. High-quality urbanization needs to become a global practice. A clear purpose will help better drive green urbanization.

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China is a distinct territory with many geographic differences and a large population. Some of China's urban residents have a house in the city and the country. Family members at times live and work in different locations, making it critical to consider the impact of mobility. It will also be important to look into the relationships between urban and rural areas.

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There appears to be a dichotomy between a nostalgic way to look at traditional villages and the present urbanization trends. The word *design* has not been mentioned thus far; a city can be structured in ways that preserve the atmosphere of a village. The proper design of a city should encompass various spatial scales.

f. Forum 6: Beautiful China 2035

Ms. Maria Krautzberger, CCICED member and co-team leader of the Beautiful China 2015 SPS, as well as president of the German Federal Environment Agency, and SPS co-team leader Mr. Hu Baolin, CCICED special advisor and honorary Dean of China's Research Institute on Green Development at Tianjin University, co-chaired the forum. Ms. Krautzberger made the following opening remarks:

China aims to make a green shift by the year 2035 and achieve a fundamentally improved ecological environment. This is a major milestone for the Chinese government and is central to the establishment of an ecological civilization.

The SPS finds there are a few pathways open to developing environmental improvement goals; the study centers on institutions and improvement criteria for policies and initiatives. The research looks into legislation, law enforcement, the judicial system, and the compensation system for environmental damage. One target is to establish a mechanism for settling environmental disputes and also to implement rule-of-law measures.

As we witness withdrawals from international agreements and the denial of scientifically proven facts, this collaborative work on global goals is more important than ever. There is no time to waste if China is to achieve a fundamentally improved ecological environment by 2035.

Co-chair Mr. Hu Baolin made the following opening comments:

This year, the Chinese government held an important environmental conference bringing together the country's main leaders. President Xi Jinping stressed the importance of reducing pollution and enhancing environmental protection.

There are three main timelines: 2020, 2035 and 2050, to see environmental improvements to air, land and water. It is important to have a long-term goal with coordinated plans and pathways.

In the last five years, China has made rapid progress on the comprehensive planning and institutional development required to achieve an ecological civilization. President Xi's "Green is Gold" philosophy is gaining ground, while China is also paying attention to global governance goals.

Ms. Krautzberger chaired the first session on Ecological Environmental Quality Goals and Indicators. She made the following comments:

Since the 1970s and '80s, public awareness of environmental issues has grown. The historical turning point in chemicals and waste awareness was the discovery that in Africa and other parts of the developing world, toxic waste was imported from abroad. This led to the development of the Basel Convention on the trans-boundary movement of hazardous waste and disposal.

The disposal of waste is also crucial to China's 2035 vision because China intends to eliminate poverty by 2020, achieve basic modernization by 2035, and realize the dream of a prosperous and beautiful China by 2050.

Chemicals infiltrate every part of life, and everyone is exposed to a complex array of chemicals. The use of chemicals in a broad range of products, as well as in agriculture and pest control, yield numerous benefits.

At the same time, human and environmental exposure to chemicals presents costs, including impacts on human health and reduced environmental quality. These chemicals must, therefore, be regulated.

China's transition to 2035 can only be successful with the sound management of chemicals and waste. It is important to note that the 2030 SDGs are specific on the issue of chemicals.

It is an ambitious goal to, by 2020, reduce significant adverse effects of chemicals on human health. Recent estimates show pollution-caused diseases were responsible for nine million premature deaths in 2015, representing 16% of all mortality worldwide.

Countries committed to the 2020 chemicals goal at the World Summit for Sustainable Development in 2002. Implementation requires robust legislative and regulatory frameworks at all levels, enhanced responsibilities for all stakeholders, and the promotion of public information.

The EU implemented the 2020 chemicals goal through a comprehensive set of legislation throughout the life-cycle of chemicals. For example, regulation concerning chemical registration covers almost all chemicals and aims to substitute those with high concern with safer alternatives. Most importantly, all hazardous information is made publicly available. For China to manage its goals, a sound, long-term management plan should encompass the lifecycle approach, prevention, and contribution to sustainable development.

Mr. Zhou Wei, CCICED council member, professor and president of the Highway Research Institute of China's Ministry of Transport, opened the panel discussion with the following thoughts:

The goal is that by 2035, there be a fundamental improvement in the environment. By the middle of the century, the overarching goal is that there be a harmonious existence between humanity and nature.

By 2020, China will focus on air, water, soil and pollution control, including reducing pollutants. Cities will see a reduction in particulate matter. Urban areas plagued by heavy pollution should experience a 25% reduction. Water quality, forestation, wildlife, wetlands, vegetation and soil quality are all expected to improve by 2020.

The tools required to achieve these targets are the development of an ecological and cultural framework comprising the following elements: raising public awareness, education, the development of natural wetlands. China needs to establish integrated ecological and economic systems and to develop an environmental civilization system that guarantees sound governance of natural resources, land property systems, individual planning, and ecological security.

Mr. Li Junfeng, CCICED special advisor and former director and research fellow of China's National Center for Climate Change Strategy and International Cooperation, spoke next:

To achieve the 2035 goal, China needs to look back at past experiences. The country was successful in controlling pollution, but environmental degradation has not been addressed.

China needs to focus on protection – this should be the starting point for development. Environment is even more important than culture and education. China can look to other countries to learn from their successes.

Mr. Wang Yi, member of the National People's Congress of China's Standing Committee, and vice president of CAS' Institutes of Science and Development, made the following remarks:

China excels in planning, but there are shortcomings. For example, Mr. Yi said there are many national macro targets, but it is difficult for China to achieve more modest, small-scale objectives.

Roadmaps, timetables, and tasks should be identified to reach each of these goals. China will experience a significant structural change in the coming years. For instance, ecological red lines now cover 25% of the territory; by 2035, the goal is to preserve 50% of the territory. China also intends to shift from fossil fuels to renewable energy.

The country is still using the conventional yardstick of economic performance, but we should move away from GDP toward environmental criteria. In order to ensure green strategies can drive the economy, China will require conditions to harmonize human activity and nature in terms of economic and social development. China is now a middle-income country, but people are reluctant to pay for transformation. Social progress and systematic changes are crucial factors to ensure the necessary improvements.

Mr. Zhou Wei, CCICED council member and professor and president at the Ministry of Transport's Highways Research Institute, was the first panellist to discuss the topic. He made the following main points:

For China to reach its goals, efforts will have to be intensified. Goals must be specific to sectors and regions in order to identify responsive policies.

China does not yet have the capacity to monitor the impact of cars on pollution levels; major pollutants need to be classified and the data analyzed. This can lead to policies, penalties and rewards.

The central government shoulders much of the responsibility of environmental protection, but all levels of government must be involved and join efforts instead of working against one another.

Ms. Jessica Kao, senior attorney and policy advisor, and retired China Program Director of the U.S. Environmental Protection Agency's Pacific Southwest Region made the following comments:

Some populations and communities tend to carry a disproportionate burden of environmental degradation – children, women, the poor. If a 'Beautiful China' is to be created, it is crucially important that China makes life beautiful for all her people.

Beauty is definitively not scientific, but the 'Beautiful China' concept is incredibly evocative. Environmental protection requires policy foresight, political resolve and innovation, but the foundation is human behaviour, which can be leveraged for change.

People working in the environmental field refer to data but bringing in concepts such as beauty could allow more people to be moved. Every tool in the toolbox is needed. This needs to become real to people, so fundamental thinking will be required to reach basic motivations.

General debate and comments

Both high-level and pragmatic goals are needed. The concept of a Beautiful China cannot be reduced to a scientific explanation. But by 2035, the government intends to have the country fully modernized, with clear targets for greenhouse gas emissions.

Mr. Hu Baolin chaired the second session on Demand for Institution and Policy Innovation. He introduced Mr. Hideki Minamikawa, CCICED member and president of Japan's Environmental Sanitation Center, who made the following remarks:

After the Second World War, Japan had lots of garbage, which was burned or dumped into landfills. Waste volumes increased rapidly as a result of economic development and population increases. In some instances, trash was dumped into rivers and the ocean.

Waste levels increased with economic growth in Japan from the 1960s to '70s, and an economy of mass production and mass consumption developed, which caused a rapid increase in waste. This made it also increasingly challenging to deal with industrial waste, and vast amounts of effluent ended up in rivers.

By the 1970s, Japan enacted the Waste Management Act, which defined responsibilities for waste. The onus was put on companies to manage their waste, and pollution control became part of the law. To cope with growing waste volumes, Japan supported the co-selection of facilities across the country. Defined standards were set, and facilities were supported in reaching these standards.

The Waste Management Act placed the responsibility of garbage management on waste-generating companies. Some companies resisted taking responsibility for waste disposal and outsourced the job to unauthorized operators, who performed the service at low cost.

In some cases, large-scale illegal dumping occurred, creating a deep distrust from citizens. Japan was confronted with the complete breakdown of its industrial waste-management system. The Act was revised several times from 1997 onwards in order to ensure that waste-generating companies take responsibility. This was accomplished through such measures as increasing fines.

Japan has now shifted its focus to reducing waste generation itself. To move away from mass consumption, Japan established the Basic Recycling Act in 2000, which provides a clear vision for reducing and managing waste.

Mr. Seung-Joon Yoon, CCICED member, professor at Seoul National University and former president of South Korea's Environmental Industry and Technology Institute, was the first speaker on the panel. Here is a summary of his comments:

In South Korea, there are four players in environmental protection: government, industry, citizens and the media. Government laws and regulations, which can send signals to the market, are only potent when they are enforced.

The growth-first rhetoric argues that environmental protection is restrictive to economic success. The top environmental culprits are often large-scale companies. Small- and medium-sized enterprises often don't have the means to follow government legislation.

In recent years in South Korea, neither bureaucrats nor politicians have had the most impact on policy – rather, it's concerned citizens that have created the change. Journalism plays a significant role in keeping industry and government in check; the news media is key to raising public awareness.

Mr. Zhu Baoliang, chief economist and director of the State Information Centre's Economic Forecast Department, made the following comments:

China aims to foster coordination between environmental protection and industry. The goal is to guide people towards conscious consumption and encourage green products. China must also guide investment in high-tech green industries.

Green transformation should pertain to economic as well as social development and policies. On the demand side, the state would like education to reshape the expectations of consumers and promote sound consumption. Market incentives need to be in place to support green transformation. Yet the market is not enough; there needs to be input from the government. China will also need to establish metrics to measure progress; there is the perception that China lags behind its peers in this area.

Mr. Jan Bakkes, senior strategic advisor to the director general of PBL, the Netherlands Environmental Assessment Agency, made the following remarks:

Key elements, such as targets, long-term timelines, small steps and legislation, have already been noted. The term 'Beautiful China' is useful because it includes concepts such as a healthy environment and cultural history.

China has the asset of almost being a world unto itself in terms of climate zones, wealth levels, and economic activities, so it might be useful to look at other places in the world that have that kind of diversity and are creating environmental goals – such as the EU. Many have mentioned 2035 as the midway point for China on the journey to becoming a great nation, which helps to make the forecasting task manageable.

Clean coal is a trap because it can lock a country in fossil-fuel hardware – therefore, it is essential to devise strategies that avoid this. Considering the period between 2020 and 2035, there will be shocks regarding climate change and land availability in areas such as India and Africa.

Mr. Wu Shunze, director general of MEE's Policy Research Center for Environment and Economy, made the following points:

To achieve the Beautiful China 2035 goal, China has to ensure it has standards that differ from 2020 to 2035. China needs a balanced approach that equally incorporates and prioritizes air, water and land; it needs to ensure all regions of the country see improvement. There must be a balance between green development and economic development.

The SPS team's research considered the need to rapidly set macro goals within the overall 2035 objective. The team needs to ferret out a real-world benchmark. For instance, could China meet the levels of the developed world?

In the next 17 years, China cannot solve all problems at once; rather it must take a phased approach. Concerns need to be prioritized. The first priority should be air quality in large cities. China should also look at improving infrastructure, encouraging high-tech innovation, and providing funding to find further environmental solutions and market incentives.

Ms. Maria Krautzberger concluded the forum with the following remarks:

The different contributions and discussion showed clearly that on the one hand, China needs a comprehensive and integrated approach, and on the other hand, China needs to keep in mind that there are bridges to build. Discussion emphasized two further points: that it is critically important to raise public awareness, and that planners need to remember that over-arching goals are not enough.

g. Forum 7: Green Consumption for Green Transformation

Ms. Marjorie Yang, CCICED member and chairman of Hong Kong's Esquel Group, and Ms. Kathleen McLaughlin, CCICED member and resident of the Walmart Foundation, co-chaired the forum. Ms. Yang opened with the following remarks:

Farming cotton uses up 90% of the water during the full production cycle, and almost 35% of the cotton fibre is wasted before a garment is produced. Capturing supply chain waste can drive many sustainable outcomes. The jacket I am wearing today is made of 33% reclaimed cotton.

When my daughter and her team proposed creating garments with reclaimed cotton to our staff, there were tears. Some older team members questioned whether the products would be durable or stylish enough. My jacket proves otherwise. This is just one example of how we need to let go of old ideas and move toward new, greener ways of creating clothes.

Young people need to be empowered. I used to be the torchbearer for the environment in our company, and now I am just one of those "older people" who stand in the way of young innovators. The younger generation is very enthusiastic, yet we can still be mature defenders of the earth.

Ms. Kathleen McLaughlin spoke next and made the following comments:

We have to find how to unleash the enthusiasm for green consumption. The challenge in China is determining the role of green waste in accelerating a green transition.

So much of our conversation is about green production, but that's not sufficient. Consumption choices need to shift. China's economy is going to continue to change from an investment model to one that is driven increasingly by consumption and services. As more families join the middle class, demand will surge.

The Chinese government has put forth a greater number of supportive policies and consumers in China are more mindful of green choices. Walmart is trying to understand how to make people care more about the environment and how the company can use technology to inform people and equip them with the knowledge to make the right choice.

Ms. Marjorie Yang chaired the first session on Green Consumption in China and Promoting Strategy Suggestions. Mr. Ren Yong, director-general of MEE's Environmental Development Center made the following points during his address:

Consumption in China is based on the concept of "trading up". In 2017, the total retail sales of consumer goods were four times that of 2004.

Currently, China's average per capita household consumption totals $2,700 annually, while in the US and Europe, the total is $20,000. Consumers are shopping online, making e-commerce an essential driver of consumption. It also drives the GDP forward, contributing 78% to the total GDP so far this year.

The consumption model affects the environment because of the draw on resources. Overconsumption is a major problem. We all love Chinese food, but the way it is consumed generates a lot of waste – enough to feed 200-million people for one year.

Some 200-million cellphones are also wasted each year. There are also issues related to the plastic packaging used for most products sold. There are 200 million cars in China, spewing exhaust. And 200-million tons of solid waste is produced in China's cities, in addition to the 120-million tons generated in rural areas every year.

The government has various policies such as green construction practices, tax benefits for energy-saving products and green government procurement, but there needs to be improved implementation. There is a need for guidelines and legislation, but for the time being, the focus needs to be on capacity-building for green consumption.

At present, the Chinese government does not have a centralized unit mandated to implement green consumption. President Xi Jinping has stated green consumption is beneficial, so this is gaining momentum. The Chinese government should use green consumption to foster social transformation.

Ms. Åsa Romson, CCICED member and Sweden's former deputy Prime Minister and Minister for Climate and the Environment, made the following remarks:

When an economy grows, so does its footprint. Private consumption is an important driver. People need to reconsider how and what is consumed. Sweden has a national strategy on sustainable use, phasing out harmful chemicals – in every step you want to make it more circular. Unfortunately,

phasing out harmful chemicals entirely cannot be done by one country because of supply chains, so it's something every country should do.

Many people say they want to buy eco-conscious products, but they don't, because of price, convenience and other reasons. If sustainability is to be at the forefront of a modern economy, then the reuse business and incentives need to be considered.

There is a lot of funding required to build a business case for the circular economy, and it is a challenge. Standards will need to be set ensuring products are designed to last longer, and financial support schemes will be required to open new markets and encourage behavioural changes. A recent example in Sweden is an e-biking strategy, where private citizens received refunds on e-bike purchases.

Ms. Gwen Ruta, executive vice president, Environmental Defense Fund (EDF), made the following comments:

China is entering into a new era of innovation. Green supply chains are not unique but determining how to change practices and have an impact at scale is still an urgent challenge.

Business practices will not change overnight, but new approaches are needed, which is why EDF is accelerating its work on green consumption with what is called the fourth wave of environmentalism.

Over history, human ingenuity has propelled environmental progress. Initially, the focus was on land conservation. From the '60s to the '80s, the focus was on industrial pollution and enacting laws to reduce pollution. In the 1990s, more economic levers and market-based solutions were devised, such as corporate sustainability.

In the 21st Century, merging technologies can drive a new wave of innovation – the fourth wave. This period includes AI, blockchains, machine learning and sensors, which all enable businesses and citizens to fast track sustainability.

EDF and Stanford University have launched a competition to develop new techniques to harness methane leaks at oil and gas facilities. Some 11 different organizations have been invited to test new methane technologies that can be deployed on trucks, planes and drones.

In Houston, EDF is working with companies to map air pollution block-by-block. In partnership with the City of Houston, EDF has deployed monitoring systems throughout the city to create maps of pollution hot spots in real time, allowing regulators and citizens to identify pollution point sources.

AI and other monitoring devices are being used in fishing and on farms to ensure greener practices and less waste. This fourth wave is also transforming how business leaders set financial targets and sustainability goals. In 2017, EDF surveyed more than 500 top business leaders and found that 70% said their business goals and environmental objectives are more aligned now than they were five years ago, mainly due to technological innovation.

The fourth wave can change the game in the retail sector. EDF worked with Walmart to devise a way for Walmart to collect data on the chemicals in their formulated products; Walmart uses the database to assess those chemicals against 18 health and environmental benchmarks.

The policy led to the phasing out of 10 chemicals of concern in more than 10,000 products sold by Walmart. Similar pledges were offered by other companies such as Johnson & Johnson and Palmolive. This is an example of big data, and how new technologies can improve the safety of the products that are on the market.

Mr. Finn Pratt, CCICED member and secretary of Australia's Department of the Environment and Energy, made the following remarks:

Australia's natural resources are extensive. The country is a major exporter of minerals and natural resources, including to China. Australia has a complex federal management system, with three levels of government – federal, state and local. Resource management systems are devised in a balanced way. It is not always easy to achieve, but this balance is integral to our quality of life.

The circular economy helps alleviate waste. China's policy restricting the recyclable waste into the country has turned out to be an opportunity for Australia to bring together all levels of government in collaboration with industry and community, to improve waste management, and take more action toward creating a circular economy.

Before the ban, Australia exported to China 1.4-million tons of waste, representing 4% of the total. While a small fraction of the total, it included 35% of recyclable plastics, and 30% recyclable paper and cardboard. Since then, in a landmark agreement, Australia's nine environment ministers agreed to reduce total waste.

It is now easier for products to be recycled, waste reduction is encouraged, and we are seeking ways to generate energy from waste and bio-fuels. A plan has been endorsed to ensure 100% of Australia's packaging is recyclable, combustible or reusable by 2025.

By 2030, Australia intends to reduce per capita waste by 10%, increase resource recovery rate from 57% to 80%, encourage 30% recycled content across all goods and infrastructure. The plan also includes reducing the amount of organic material going into landfills, phasing out harmful plastics, and delivering the right information to people, government and businesses to ensure informed decisions are made.

Mr. Lo Sze Ping, director and CEO of WWF (China), made the following comments:

WWF has reported there has been a 60% decline in the number of species in the last 40 years, which is the ultimate indicator of the pressure humans are putting on the planet. That humanity is driving the planet to the brink has been known for years. Increased consumption and demand for resources, land, and water is precipitating the earth into a new geological age. It is the first time in planetary history that a single species (homo sapiens) has had such an impact.

Progress in environmental protection has not kept pace with consumption, which has increased substantially. Fossil fuels, agriculture, and urban growth have the most significant impact on the environment.

Agriculture uses 70% of the globe's fresh water and is the primary cause of deforestation. China imports 60% of soya beans globally and accounts for 53% of Brazil's soya exports, with significant impacts on the Amazon.

This CCICED SPS will explore avenues open to China, with the understanding that China's actions will have global implications. Just choosing to eat less meat or none at all will benefit the environment. It is time to reconsider the current diet of Chinese people and its impact on health and land. Food waste is another concern.

Palm oil and beef cause significant deforestation in vulnerable areas around the world. Asia and India import the majority of these products. The government should also fight against the import of exotic animal parts and encourage better use of plastic packaging. The role of government is hugely important in guiding consumer and company actions.

Ms. Åsa Romson chaired the second half of the forum. She introduced **Mr. Dechen Tsering**, director of Asia and Pacific Regional Office, UN Environment, who made the following remarks:

At the next UN convention, there will be an examination of environmental challenges and sustainable consumption production, including food systems, since this represents a significant challenge. Food waste is a significant concern and will require rethinking how food is produced, transported and consumed.

UNE intends to enhance food security and resource efficiency, which calls for global efforts.

The banking sector tends to be conservative, but this area needs to change for there to be a genuine impact.

Mr. Wolfgang Seidel, President Office head of division, German Federal Environment Agency, made the following comments:

The German National Program for Sustainable Consumption is similar to Sweden's. The German plan addresses the central issues of mobility, housing, food, office, work, clothing, tourism and leisure.

Eco-labelling is vital for sustainable consumption because of its effectiveness. Germany has an agreement with China on the eco-labels in each country. The German sustainable strategy has set as a target 34% of market share for eco-label products by 2030 – which is still far from achieved. What could be improved is Germany's sustainable national consumption approach, which could be strengthened with taxes or quotas.

Ms. Zhang Linxiu, researcher with the Center for Chinese Agricultural Policy at China Agriculture University, spoke next and emphasized the following points:

Green consumption is critical because consumption drives production and distribution. To increase awareness and target consumer behavior changes, attention needs to be paid to the gender of those making both farm production decisions and household purchasing decisions. Studies show that in China, 60% of farm production duties have been taken over by women; this is because men have migrated to the cities for work.

Similarly, an important share of green consumption decisions are made by educated women. Reports indicate that in China, women control more than 60% of household finances and make 80% of the household spending decisions. There is an urgent need to incorporate the gender dimension into the equation when it comes to changing behavior.

Kai Li, vice president of the company Meituan Dianping, made the following remarks:

The Chinese government values green development which is why it has conceived of an eco-labeling program which leverages the power of consumers to force green production. In China, the supply side is reforming, and there are many green products on the market that fit into the circular economy concept.

China wants to ensure the lifecycle of a product is low-carbon, green and sustainable. In 20 years of environmental protection, China now has an established recycling system and put limits on the emission of greenhouse gases and wastewater in different sectors such as food, textiles and automobiles.

The government prefers products with eco-labels, which further incentivizes companies to conform. Meanwhile, changes are happening in such industries as printing, with some companies adopting clean production. China has strengthened cooperation with other countries and adopted some of the same standards of eco-labeling as Germany. China's approaches have been shared with African countries, and China is establishing a carbon market.

Mr. Xu Lin, chair of the U.S.-China Green Fund, made the following comments:

The US-China green fund works for the government in China, where the state owns the natural resources. Pricing can influence behavior, but China's pricing strategy to date has not been robust enough to affect energy consumption. Pricing does not fully reflect costs. Similarly, without a rational pricing system, the government will not be able to realize water conservation.

Taxes can be used as an instrument to adjust prices. To encourage clean production, incentives should be used. China is an early adopter of green bonds, yet incentives for green finance are still lacking. For example, government subsidies are essential to cover the cost of green production and green investment. Better mechanisms for trade and improved service systems for green development are required.

Mr. Pan Jiali, director of Corporate Social Responsibility for the company Cainiao, made these remarks:

It is essential to work with enterprises to implement environmentally sustainable business models in various sectors, including retail, food and manufacturing. Cainiao recently participated in an effort by Shanghai's municipalities to draft standards for the food delivery industry. The effort saw the initial use of biodegradable and recycled food packaging, with the hope to see more than 100,000 restaurants adopt these materials. The initiative is linking up with as many partners as possible to benefit the environment.

In May 2018, Cainiao and its business partners launched a logistics environmental plan for the Alibaba Group, to be implemented in 2020. The goal is to build up a greener network by encouraging eco-conscious consumption choices.

General debate and comments

Grandmothers are an excellent educational authority. Children live in a world where goods can be bought over the internet with little consideration for need or use, while our grandmothers reused everything they could and didn't buy anything that wasn't necessary.

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Waste won't disappear at once; people will need time to develop better consumption practices. It is imperative to mobilize political will, public support, and business leadership in an urgent, timely matter. NGOs and business can work closely together to convince people of the urgency and of the impact individual decisions can have. It is critical to forge the link that is missing now between personal choices and the impact they have on the environment.

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It is an error to think efficiency can replace volume control. It is important to quantify the results of green consumption to inform policy making and behavioural change. In Sweden, there are many policy experiments on the national and local level to show how green consumption contributes to sustainability.

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Ms. Kathleen McLaughlin closed with the following comments:

The scope of green consumption encompasses a whole-system change, along the entire lifecycle of products and in industries and sectors – a change towards social, economic and environmental equilibrium. This is the nature of the challenge. Sustainable consumption and its twin, sustainable production, go together.

This is about making better products in the first place and then helping people make better choices. The SPS could start by considering food choices, food loss and waste, commodity agriculture, wildlife products and plastics. The open forum touched upon what could be done to accelerate progress, and suggestions included the following: having aligned goals and standards around the outcomes, developing an inspiring narrative, technology, funding, incentives and infrastructure.

h. Forum 8: Green Development Innovation for the Yangtze River Economic Belt

Mr. Stephen P. Groff, vice president of ADB and CCICED member, and Mr. Wang Jinnan, member of the Chinese Academy of Engineering and president of the Chinese Academy for Environmental Planning, co-chaired the forum. Mr. Groff opened with the following comments:

The Yangtze River is a critical lifeline for China, economically, environmentally and ecologically. It is the third largest river in the world and contributes to 45% of the country's GDP. However, the Yangtze River Economic Belt (YREB) economic benefits have come at an extremely high cost to the environment.

Communities in the YREB are extremely varied and face vastly different issues. These challenges are multi-faceted and require coordination.

Chinese government targets in the YREB plan are ambitious, and much needs to happen to achieve them. ADB is focused on environmental protection of water resources and ecosystem restoration; green and inclusive industrial transformation; construction and maintenance of an integrated multi-mode transport corridor; and policy frameworks that will allow for enhanced connectivity.

These issues are difficult to address and require the commitment of government and development partners. This forum allows for discussion of the key policy recommendations prepared by members of the SPS.

Mr. Wang Jinnan chaired the opening session on Policy Recommendations for Green Development Innovation in the YREB. He made the following comments:

After three months of research and study, the SPS is concluding that the YREB should come under a common governance. A policy framework to manage the river needs to be developed, with shared responsibilities assigned to stakeholders. The SPS recommends the coordinated management of the mountains, rivers, lakes and grasslands.

The team intends to suggest innovative approaches to eco-compensation that would encourage residents to plant more trees. China should further coordinate multi-stakeholder collaborations by encouraging government and private sector actors to jointly address environmental challenges. This could be done with a PPP approach or by integrating eco-compensation in rural revitalization.

Green finance mechanisms need to be established. A team visit to the YREB area revealed there is an abundance of bamboo growing in the basin, which can help fuel the economy.

A few days ago, China's Ministry of Finance organized a working meeting in Wuhan on ecological compensation in thee YREB. There is a plan to create a pool of capital that is mostly publicly funded and can be used to compensate for ecological services provided both upstream and downstream.

The SPS recommends the creation of a Yangtze River ecological fund that government could contribute to, along with the private sector, in order to invest in development and restoration in the YREB. The MOF suggests it could take on management of the fund. It is also necessary to set up a joint-protection program for enterprises.

Laws can protect the Yangtze River. Our SPS recognizes the importance of legislation when it comes to protecting the Yangtze River. President Xi Jinping has made it clear that it is vital to bring this legislation to bear speedily. The SPS recommends the laws be basin-wide, comprehensive and specific.

Ms. Amy Leung, director general of Asia Development Bank's (ADB) East Asia department, underlined the following issues:

Rapid-economic growth has led to vast improvements in human well-being and quality of life, but also to climate-change challenges and governance issues. In the last three years, growth has moderated, and now countries are focusing on the quality of growth. It is in this context that ADB and China have chosen to focus on transforming the economy to ecological civilization.

Achieving a balance between growth and nature is critical in eliminating rural economic disparities. Environmental management is key to development; the government needs to be supported in

setting up integrated water and land management regimes and strengthening governance for preventing pollution and fostering rural development.

Over the last 17 years in the YREB area, ADB has provided project loans to various provinces and municipalities; many projects have improved water pollution and management. The main lesson learned is that green projects alone are not sufficient, nor is the availability of funds the only solution. Coordination and cooperation across sectors and jurisdiction are required.

To generate sustainable results, ADB has shifted to a programmatic approach in which projects cross boundaries, are better coordinated and tap more private-sector support.

ADB got involved in the YREB initiative when China unveiled its master plan for the region in 2016. The plan is ambitious, with goals such as the improvement of 75% of the water to a Grade 3 standard or above, forest coverage to reach 43% of the territory, and all of the water management organizations meeting green standards and eco-system functions by 2030. The CCICED Yangtze SPS is a crucial component of this work.

Mr. Stephen P. Groff chaired the first session on Legislation for Protecting the Yangtze River. He introduced Mr. Cheng Lifeng, member of the Standing Committee of China's National People's Congress (NPC) and of the Natural Resources and Environmental Management Committee of the NPC, who made the following points in his address:

The protection of the Yangtze River is crucial to China's ecological security because of its unique eco-system and the importance of the eco-services it provides the country.

Spatial planning and better management of water use need to be implemented so there can be progress in economic and social development, and the living standards of people in the basin can improve. Industries need to be upgraded, the functions and features of the land itself need to be identified and resource use needs to be better coordinated.

All industrial zones should meet set criteria and be more innovative in their environmental protection efforts. An eco-compensation regime needs to factor into the area's budget for environmental protection and remediation.

Mr. Mark Tercek, CEO of The Nature Conservancy and CCICED member, made the following remarks, providing international examples of legislative and other policy reforms to support environmental outcomes:

Ten years ago, when I became CEO of the Nature Conservatory, I thought we could achieve our goals largely through innovative finance and corporate partnerships. For the most part, these strategies are effective. But to realize anything significant, what is essential is the power of governments and the laws that enable innovative finance and the enforcement of environmental goals.

TNC works in 72 countries, including China for the past 20 years. But TNC started in the United States in 1951 and has experience with all of its big rivers.

The U.S.'s Clean Water Act was passed in 1972 and has driven a lot of essential outcomes for waterways. This was needed because no one was taking care of the rivers – the Cuyahoga River in

Ohio was so polluted with chemicals that it caught fire. The Clean Water Act has reduced pollution from industry, but it didn't provide strong regulation for pollution from such aspects as agriculture run-off.

Mandatory limits on some of the pollution affecting the Chesapeake Bay was mandated by the Obama administration, which led to significant improvements.

These regulations have spurred innovation in the private sector. For example, in the area of stormwater management, companies in Washington, D.C. can buy credits from off-site green enterprises in another part of the city. The stormwater business is a triple-win for storm waters, nature and the economy. Polluted run-off is captured before it reaches the waterways, and green infrastructure projects also provide wildlife habitat.

Another example is advances in the use of satellite imagery to help track water conditions, identifying critical run-off areas where planting vegetation can help. TNC is strategizing with its Chinese partners on how to implement similarly innovative approaches to the Yangtze River.

Strong legislation should be recommended in order to drive policies and markets for long-term sustainable development. A great river needs multiple ecological approaches, and China can learn from the mistakes made elsewhere.

Mr. Scott Vaughan, president and CEO of the International Institute for Sustainable Development (IISD) and CCICED member, made the following points:

There are 25 years of examples of water-resource management, and the single most challenging aspect is governance. There is a wealth of experience in looking at river management around the world and policy coordination and integration. One way to enhance cooperation is to have shared databases and an agreement on the scope of the problem.

China has introduced a global measure banning 70 different categories of waste coming into the country. The SPS should look at the role of public policy and the option of avoiding waste and enforcement where there are areas of infraction.

Finland is a useful example, with a roadmap of responsible disposal and end use. Financial sustainability is also an important area. One-fifth of soil in China is considered contaminated. In Canada, there are thousands of waste sites, many of which go back decades, and have very little to no money for cleanup.

One option for remediation is green bonds – China is the largest issuer of these bonds. But looking forward, there can be different examples of green bond yields based on their impacts.

Mr. Brendan Gillespie, former head of the Organisation for Economic Co-operation and Development (OECD) Water Programme, emphasized the following ideas:

Governance is fundamental to the SPS recommendations, with four specific suggestions. The first is adopting a whole-system approach based on inter-agency cooperation; the second is engaging stakeholders; the third is on the need for institutional frameworks to provide incentives for long-term financial sustainability; the fourth is establishing institutional and legal mechanisms to achieve desired outcomes.

Water governance is tough because it cuts across different sectors and levels of government, and as the economy grows, competition for water intensifies. Effective mechanisms are needed to adjudicate trade-offs. Business and society have different interests.

Starting at the World Water Forum in 2012, the OECD established a network of experts to address these issues. The result was the 2015 agreement on OECD principles of water governance, designed to determine if government practices fit the purpose of providing strong water oversight.

There are 12 main principles with suggestions on how they should be implemented. The Netherlands found the approach helpful in assessing their systems and found weaknesses and gaps they could address.

General debate and comments

Higher levels of government will manage the lower levels, but challenges remain for lower-level government in implementing laws. Central and municipal governments must work together, but more innovative collaborations are essential. In setting future goals, all levels of government need to ensure plans are pragmatic by engaging more fully. China has different schemes for the management of air quality; environmental authorities in different regions are required to coordinate with one another. This approach should be used in managing the YREB.

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The institutional design should be driven by desired outcomes. The examples discussed help stakeholders understand what simple solutions can achieve. From the basin to the glaciers to the coast, many areas are environmentally vulnerable. It would be advisable to be much more ambitious concerning a green fund.

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Mr. Wang Jinnan chaired the second session on Policy Innovation for Green Development. He introduced Mr. Hans Friederich, director general of the International Network for Bamboo and Rattan (INBAR) and CCICED member, who made the following comments on eco-compensation and sustainable financing:

Bamboo forests are hugely helpful to climate-change mitigation and in creating carbon sinks. In Asia, bamboo is part of the local diet, and out of the six-million hectares of bamboo, about one-third are forests used for bamboo-shoot production. The annual output of bamboo in China is three-million tones, representing approximately $2 billion.

The export value is in the area of $300 million per year; this is an industry that is profitable and growing. Bamboo is used more and more frequently as a sustainably ideal material for interiors, furniture, paper, and to build homes. Bamboo helps boost both economic development and green job creation along the Yangtze River.

Mr. Zhang Qingfeng, director of Environment, Natural Resources and Agriculture Division in ADB's East Asia Department, contributed the following points:

Last February, government ministers and municipalities met in Chongqing to discuss how to increase coordination between provinces and how to enhance eco-compensation. The Ministry of

Finance announced it would reward provinces that can conclude agreements on cross-provincial eco-compensation. Several provinces subsequently signed their first trans-boundary, eco-compensation agreement.

This will significantly enhance cooperation and coordination among provinces along the Yangtze River. However, this type of transfer payment relies heavily on public funding and is not financially sustainable in the long-term. There is a need to achieve stable, long-term funding for protection, which in the end will require both government commitments and business participation.

Mr. Wang Xiaokang, president of China Industrial Energy Conservation and Clean Production Association and CCICED member, made the following remarks:

In developing the Yangtze River, it is imperative to prioritize environmental protection and adhere to green development. The challenges are complex.

After decades of growth, upstream areas have suffered degradation. A substantial amount of capital is needed to develop the YREB, and the 11 provinces need to work together under the guidance of the central government.

There are areas where good practices have been adopted and there is cooperation to improve conditions. Mechanisms need to be in place across various agencies and stakeholders to ensure smooth communication.

To protect the Yangtze River, China needs to focus on water quality, which means heavy metals and other chemicals must be addressed. Source of pollution are complex and interconnected, and a systematic approach is needed to determine the YREB's environmental goals. A combination of policy, market innovation and investment, research and government funding will be required to reach these goals.

Mr. Pang Xiaopeng, professor at Renmin University, spoke on gender mainstreaming in green development and made the following main points:

Gender mainstreaming is an important consideration in this conversation because according to the UN, it is critical to identify the different impacts on men and women, allowing the experience of men and women to become a part of social programs.

Gender equality is a necessary part of environmental protection. Environmental-protection laws have different impacts on men and women, and gender perspectives should be considered in policy making. It is important to identify the impact policy changes could have on women in the communities along the Yangtze River.

General debate and comments

The topic of gender mainstreaming is fascinating. Around the world, there are examples of how gender mainstreaming can accelerate progress at almost no cost. It is hoped the SPS report will draw attention to this dimension.

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More open and innovative financing mechanisms are required, providing the YREB with a pragmatic solution. The SPS is providing interesting suggestions to achieve this. For example, encouraging every stakeholder to be engaged and take part in the fund.

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I am a Supreme Court judge, and I hear cases related to environment and investment. Legislation is critical, though it is not enough. We also need a robust judicial system. In civil cases, we need to consider ecological compensation. Judges, especially those of us working on environmental cases, whether civil or criminal, are going to uphold the law to the highest level.

Mr. Stephen P. Groff summarized the forum with the following comments:

One element to be drawn from the discussion is on the complexity of the enterprise – environmentally, economically, geographically, financially, legally, socially, politically, and more.

Considering what has happened in China over the last 40 years, one can see what may be possible. China can overcome vast, complex challenges.

3. AGM Opening Meeting and Working Plenary Meeting

CCICED executive vice chairperson Mr. Li Ganjie chaired the AGM opening session. He welcomed China's Vice Premier Mr. Han Zheng.

a. Remarks by Catherine McKenna, CCICED International Executive Vice Chairperson and Minister of Environment and Climate Change, Canada

As I reflect on the importance of CCICED, I think of my recent visit to Giant Panda National Park, only a few days after it became a national park. I had the opportunity to see the incredible natural beauty of the park, meet locals, scientists and snow leopard guardians. It was truly extraordinary to look at the pandas up close.

To the Chinese, pandas symbolize peace, harmony and friendship – these are values CCICED also embodies. Pandas also have a warrior spirit. The Chinese people have the same warrior spirit as the panda, which I have seen with my own eyes at climate negotiations. The world needs this warrior spirit as we work to tackle enormous global environmental challenges, from climate change to biodiversity loss, to plastic pollution in our oceans.

We have a unique opportunity at today's AGM, to deepen our knowledge, collaboration and commitment to action necessary to tackle these urgent global issues. Our exchanges will help to ensure leaders and influencers in China and around the world have the knowledge, science, and evidence we need to make the best decisions for the planet and our people.

It is a crucial time to address these issues. Last month's UN climate report made it clear that the window of opportunity is closing. We also know that biodiversity loss is accelerating, and our oceans are more polluted than ever. Our planet is in crisis; we not only see evidence of environmental shocks but also shocks to our political systems, where there is a retreat from multilateralism and decisions based on science, evidence and facts.

But, as the Chinese say, crisis brings opportunity. After 40 years of opening up, China is facing a new period of transformation and is stepping up to provide global leadership. China's ambition in building an ecological civilization is offering a new approach focused on the harmonious existence between man and nature.

CCICED members welcome China's focus on environment and development, embodying President Xi Jinping's wise idea that a green environment is as precious as gold.

We congratulate China on its commitment to protecting its biodiversity, by establishing nature reserves on 18% of its land, protecting 90% of critical species and systems, and an ambitious new national park system that is being developed.

We are also proud of China's progress in its war on pollution. Air pollution has gone down remarkably in Beijing in the last year and a half, and China's largest cities are experiencing fewer smog days. This not only means a healthier environment for the people of China but a healthier planet for all. When it comes to climate change, we are all encouraged that China is staying the course.

The world is at a crucial juncture. The latest IPCC report showed a substantial difference in impacts between a 1.5-degree and a 2-degree world on all fronts, from temperature to precipitation to sea level rise, ecosystems and biodiversity, human health, security and economic growth.

We must take bold action in our home countries and internationally; we cannot wait for someone else to do it. When the U.S. stepped back, China was among the major economies that stepped up. In 2020 Beijing will host CBD COP 15, which will set a new international course for the protection of nature and conservation. We need a new deal for nature.

China can play a leadership role in many ways and is an essential player in the blue economy, marine biodiversity and international shipping. Last year, the Council suggested that China could add the marine pollution component to its climate efforts.

We know we need to act now, or there will be more plastic pollution by weight than fish in our oceans by 2050. Plastics and other debris coming from land sources is a major scourge on ocean environmental quality. China can act decisively to reduce marine pollution, including plastics, and those actions would benefit us all.

China's import ban on waste materials is a big step in the right direction, and when it comes to biodiversity China can underpin the effort for post-2020 global biodiversity conservation. China has the ability to influence the international community positively. The world needs China's environmental leadership at home and abroad.

Before I finish, I would like to take a moment to recognize the work of Dr. Art Hanson, who is retiring from his role as International Chief Advisor at the end of March. Art has been at the heart of the China Council from day one for 26 years. In September, Art received the Chinese State Friendship Award for his lifetime contribution to China's development. He is a tremendous Canadian, and truly embodies the best of humanity.

I would also like to welcome Dr. Scott Vaughan as the new International Chief Advisor. He brings a depth of knowledge, agility of mind, and exceptional leadership skills. Scott will help lead the China Council to the next level.

b. Keynote address: China's Vice Premier and CCICED Chairperson Mr. Han Zheng

I want to congratulate CCICED on this year's AGM. The theme this year is highly relevant today. The Chinese government has prioritized the environment since the 18th Party Congress and has integrated the concept of ecological civilization into the master plan for social, economic, cultural and economic development.

We have undertaken a lot of forward-looking, pioneering work with history-making changes across the board. The concept of green development has taken root genuinely, which is unprecedented. The idea that green is gold is ingrained in our minds, and so more cities and companies are viewing environmental protection as an opportunity.

We have waged war on pollution with strict measures. The Chinese government has implemented three action plans to protect water, soil and air. Between 2013-17, we phased out 117 million tons of steel capacity, 800 million tons of coal capacity, and 200 million polluting and end-of-life vehicles.

We have developed the most extensive clean coal power system and the largest waste-water treatment capacity. In the Yangtze River, there is zero growth in pesticides and fertilizer, and we have conducted about 148,000 rural projects benefitting millions in rural populations.

China has issued an unprecedented number of initiatives to develop ecological civilization, with efforts related to national parks. At the same time, we have seen unparalleled environmental enforcement, raising the cost and penalties associated with disobeying environmental laws.

We are achieving our improvement targets in air and water. Forest coverage in China has increased from 16% to 22%. At the same time, China is actively engaged in national environmental governance. China was one of the first countries to develop a plan to implement the 2030 agenda.

China is a valuable player, contributor, and torchbearer in the protection of the environment. The development of ecological civilization in China is now at a crucial stage. By 2020, eco-quality will be improved with the significant reduction of major pollutants and increased control over environmental risks. The ecological environment will be comprehensibly enhanced by 2030. We will continue with a people-centred approach to address environmental issues and innovative development.

A good environment benefits us all. We will continue with our ban on foreign waste and with our efforts in the restoration of the ecological system – to preserve nature is to protect human beings. This year, we have set up a new Ministry of Ecology and Environment and a new Ministry of Natural Resources, which separates resource owners from regulators.

The next step is to set up monitoring systems to strengthen environmental enforcement, stabilize revenue mechanism, and investments related to the environmental industry. We will work with the international community to face the challenges together and will step up our efforts to implement the 2030 agenda.

This year marks the 40th year that China has opened the door to the world, and that door is opening wider and wider. The Chinese government will continue to support CCICED.

4. Plenary Session

Minister Catherine McKenna chaired the first plenary session of the AGM, introducing MEE Minister Li Ganjie to speak.

a. Remarks from Minister Li Ganjie, CCICED Executive Vice Chairperson

The is the first CCICED AGM hosted by the newly established Ministry of Ecology and Environment. The Chinese government has always attached great importance to the environment. This year celebrates the 40th anniversary of reform and opening up – a critical phase in China's history.

The Chinese government has passed policies that indicate China's path to advanced development. In May, President Xi Jinping delivered an important speech at the national environmental conference in Beijing. He discussed ecological civilization, equal prosperity, the harmonious coexistence of humans and nature, a stable path to universal well-being, and an insistence on the most stringent protection of the environment.

In June, the Chinese government issued a call for strengthening environmental protection and resolutely fighting pollution. Regarding institutional reform, the new MEE will focus on setting standards for environmental policies.

We have rolled out a blue-sky protection campaign, identifying key areas to treat air pollution issues in the winter season this year. We have targeted campaigns against the illegal transit and dumping of solid and dangerous waste.

By the end of the year, we will complete red-line mapping in 16 provinces, which will be a significant policy measure to protect the environment. The overall blue-sky day counts rose by 1.3%. The density of PM2.5 was cut by 9.8%, and PM10 by 5.6%. In Beijing, the concentration of PM2.5 has dropped by 16.7% to 15 micrograms per cubic metre, and PM10 by 23%. There have also been improvements to water, with increases in top grade water and decreases in the more polluted grades of water. While we have seen success, we also face further challenges. Air pollution has been more severe.

China will promote broad green development concepts, ecological protection red lines, as well as caps on natural resource utilization. We will implement vertical as well as horizontal supervision and enforcement to ensure the effectiveness of environmental enforcement.

China will be proactive in supporting a green-innovation system, to allow for crucial market breakthroughs in the treatment of pollution. The government will continue to implement water body treatment controls and research. Along with setting up an awards system for whistleblowers, China will maintain public campaigns to raise awareness of environmental issues.

b. Remarks from CCICED Vice Chairperson Mr. Xie Zhenhua

A UN report from last year noted that extreme climate events are becoming more frequent because of climate change. The IPCC issued its report in October this year about 1.5-degrees, which describes clearly the impact of climate change and future risks.

In the past 12 years, China has introduced many practical measures to reduce emissions and promote low-carbon initiatives. The GDP in China has increased significantly since 2005, but carbon intensity has dropped by 46%, and we have met the target of emission reduction three years in advance.

China has made improvements in its energy mix. The total capacity for renewables has reached 650-million kilowatt hours, and we have already met our 2020 targets for renewable energy in storage capacity. We have now six million electric vehicles, which has improved air quality. In 2017, we have already met our target of increasing forestation for the carbon sink.

We have developed green and low-carbon technology and circular industry, creating more than 30-million jobs in the green sector, moving many rural populations out of poverty, which shows that addressing climate change can go hand-in-hand with building economic growth.

China is working to meet the needs of people in its country and around the globe, and to build political trust to reach the Paris Agreement. There are challenges, but we are willing to work together with all parties.

c. Remarks from CCICED Vice Chairperson Mr. Erik Solheim

A few years back, the world was aware of the pollution in Beijing. This is now dropping drastically. Yesterday in Geneva, the head of the World Health Organization for the first time officially recognized air pollution as a significant health risk, on par with tobacco, obesity, excessive drinking, that kills 7 million people prematurely every year.

To succeed on the climate issue, this has to be seen not as a problem, but as an enormous opportunity to shift economies. By better protecting nature, a massive economic opportunity is created – more tourists, increased incomes, improved health.

In addressing big environmental issues, people must not be forgotten. In Bali, Indonesia, two sisters have created an organization called Bye, Bye Plastic Bags. At ages 14 and 16, they started a massive movement with UN support, which calls for the end of plastic bags. In January, Bali will phase out single-use plastic. It could never have happened if there weren't partners like these young girls in Bali. This is the kind of engagement that must be celebrated.

d. Remarks from CCICED Vice Chairperson Mr. Zhou Shengxian

China has made historic achievements in environment and development, deepening its understanding, strengthening the legal system, and realigning goals. This is a crucial stage in China's development – when it becomes clear that the well-being of citizens is linked to the environment.

China now has valuable experience and is strictly implementing its policies. CCICED has played an essential role in promoting the protection of the environment, not only in China but around the world.

e. Remarks from CCICED Vice Chairperson Mr. Achim Steiner

China is at a moment of reflection, to inform the next phase of development and opportunities. The global story of China is still one that is narrowed down to economic transformation and involving extraordinary GDP growth. There is an understanding that lifting 700-million people out of poverty is something that hasn't been done before, and not by accident but through very deliberate design.

However, the world is entering a period of higher volatility and uncertainty. There are shocks on the geopolitical and economic fronts, which require us to ensure that progress is not lost in the context of global governance. It is wise for the China Council to have an explicit view of this volatility, encouraging international leadership to look to China as a stabilizing factor.

The BRI is a positive opportunity, a way for other countries to develop their policies. It is an opportunity for China in its engagement with other developing countries to embed policy guidance.

f. Remarks from CCICED Vice Chairperson Mr. Vidar Helgesen and CCICED member Ms. Åsa Romson

Mr. Vidar Helgesen offered the following thoughts:

When nature is out of balance, humanity is thrown out of balance as well. Changes mean more unpredictability and unknowns. At the same time, there is promise in technology and finance.

Politics will not produce predictability, but the world needs unwavering policies to accelerate change. China's ecological civilization concept could be part of the solution, coupled with strategies for greener innovation. Also promising are the action plans developed at the global level such as the SDGs and the Paris Agreement, and hopefully in a few years, a new action plan for nature.

This is a promising time for the CCICED to meet and discuss the big issues of our time, to accelerate change for the betterment of nature and human society.

Ms. Åsa Romson, CCICED member and Sweden's former Minister for Climate and the Environment, made the following comments:

Humanity is running out of time on climate and must focus on getting a global price on carbon. Strong measures are needed to decrease the emissions in steel and concrete building materials radically. In both of those issues, China's role is crucial.

In Sweden, there is a carbon tax which works in conjunction with the EU trading scheme for specific sectors. Sweden also champions technology to make steel and concrete production free of carbon emissions, and it mandates the recycling of building materials.

The understanding of innovation must be revisited; it is vital to upscale known solutions to best practice. There must not only be a focus on getting better ideas but rather on getting good ideas today working worldwide. The CCICED can inject a sense of urgency into these issues.

As an example, BRI projects should be conceived with the assumption that they can be built in a fossil fuel-free fashion. It is imperative to rethink the types of infrastructure required in the future.

g. CCICED Issues Paper

International Chief Advisor Mr. Art Hanson presented the 2019 Issues Paper and emphasized the following points:

The elephant in the room is all of the shocks – environmental, political, and economic. Going back to the 1970's book by Alvin Toffler entitled *Future Shock*, several predictions made at the time have now come true. It is important to address how these shocks should be managed.

This is a new era for China, and it needs to also be a new era globally. The fundamental issue is how to redefine globalization along the lines of the planetary boundaries. Ecosystem services need to be expanded to ensure they provide for the billions living on Earth.

The CCICED has not tackled large political challenges such as the rise of populism. One of the values of taking an ecological civilization approach is that it allows for more critical thinking on these questions. Synergies will be significant in the future. The CCICED's work has to be conducted in the context of the SDGs because this is the most comprehensive guide available.

It is also important to consider how the digital economy can work for ecological development and eco-civilization, and the leading role China can play globally. The eight areas addressed in the Issues Paper set relatively high targets since the timeframe is limited.

The 1.5-degree Celsius challenge and opportunity is a wake-up call that is the loudest ever heard. China will be a torchbearer for a green and sustainable world, even during this period which is rife with contradictions that threaten our future.

h. CCICED 2018 Draft Policy Recommendations

CCICED Chinese Chief Advisor **Mr. Liu Shijin** made the following remarks in presenting the draft recommendations:

Represented in the draft recommendations is the rich content from the SPS reports. There is a discussion of the current uncertainty and shocks, such as trade wars, climate change, biodiversity losses and agreement withdrawals. The policies proposed offer ways that China can share its environmental and development experience and take on more significant leadership in fostering green global governance.

The draft recommends that China step up to assume a key role in global climate and ocean governance, be a leader in promoting biodiversity goals, pursue sustainable urbanization, and the greening of the BRI, and strengthen reform in the YREB.

Minister McKenna handed the meeting over to CCICED vice chairperson Vidar Helgesen to chair the discussion of the recommendations.

Discussion and comments

Greening infrastructure, like in the BRI, comes down to making good plans to avoid or minimize impacts on biodiversity – it can protect habitat and enhance biodiversity. If the planning starts soon enough, it often means the infrastructure can cost less and be more efficient.

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Biodiversity goals can be more ambitious. These goals are helpful and useful, but the depth of today's discussion provides new thinking; perhaps this area of the recommendations can be strengthened.

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The concept of sponge cities, which is a concept that China is leading, is missing in the draft. China can show other countries how nature can be used to avoid flooding and other natural disasters.

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Statements from the Chinese government today addressed the moral underpinning of environment protection. The Issues Paper and the draft recommendations bring forward a lot of suggestions, but there may be a need to mention the trade challenges that China is now facing. It is more critical than ever for leaders to realize that China's environmental policies also enhance economic opportunities, instead of smothering them. It is important to demonstrate that ecological reform will lead to greater prosperity and more jobs. •The recommendations are broad in scope and cover all of the priorities. Perhaps the language in the text will be chosen to trigger action and create a sense of urgency. At present, business people may not discern a call to action from this draft. There are great examples of Chinese business leadership that can be showcased.

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What is still missing in the text is a set of recommendations to accelerate the greening of consumption and production. There are ways to accelerate sustainability of production that will build the capability and competitive advantage of Chinese products. There is a strong economic case to be made for greening consumption in a way that is good for the economy and environment.

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On recommendation number 3, dealing with making the CBD COP 2020 the most successful. It is essential to choose the language carefully. The narrative is critical to convey that a transition is not only necessary but also appealing.

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China not only needs to focus on current environmental protection but also on future security. As China promotes ecological civilization, it needs to build a sound and reliable insurance system, and reform its governance of environmental issues in order to eradicate the deeper problems. For example, there are inconsistencies and irregularities in the numerous regulations pertaining to YREB. Environmental rules and regulations need to be better codified; China can learn from international experiences to avoid enforcement confusion. •The legal policy recommendations are a good fit for the problems faced by China, but there is a massive gap between the status quo and the targets that are proposed. With new technology, the issues of monitoring and data collection, for example, could be tackled in a more cost-efficient way.

5. Working Plenary Meeting

a. Report on the Roundtable Discussion

Mr. Erik Solheim, CCICED vice chairperson, chaired the session and introduced CCICED member Mr. Scott Vaughan, who summarized the roundtable discussion on the low-carbon circular economy for green development:

The recent IPCC report has emphasized how the window of opportunity is rapidly closing, making it urgent to address the global environmental crisis. Solutions have been identified; countries know how to move towards low-carbon opportunities, but time is running out.

The discussion outlined decreasing waste, lowering GHG emissions, and boosting the economic value offered by the curricular economy. Participants mentioned China's waste import ban and the ocean plastic charter as vital parts of a broader systematic approach; the growing number of countries banning plastics was mentioned.

Spatial planning was described as well suited to bring together different levels of government, the private sector, and other stakeholders such as business. Walmart, Apple, and other business representatives stated that the private sector is a stable source of innovation and applied solutions.

The final session was on partnerships, which underscored how governments are increasingly engaged in the circular and low-carbon economy. A strong message is that partnerships accelerate progress. Participants concluded this is an important issue, and many said they would like CCICED to give the problem more attention in the future.

b. Report on the Green BRI Forum

Council member Mr. Li Yong summarized the discussions:

Opportunities and challenges were identified. Opportunities include improved capacity for green governance, a chance to help BR countries integrate the SDGs and to increase public awareness of ecological issues. Challenges include access to green financing, lack of unified green standards for project planning construction and operation, and a lack of policies and technology.

Policy recommendations put forward include promoting strategic alignment in the development of the green BRI and promoting the integration of environmental cooperation into BRI implementation. Green financing and the development of a green fund are strongly recommended to support greening the BRI. Green finance needs not only the support of the government but also the public sector and financial institutions.

Partnerships among the public and private sector are also an essential part of the SDGs. The Green City Initiative, through the shared development of environmental infrastructure related to water treatment and garbage thermal power plants, marks an important aspect of green development in BR areas.

c. Report on the Forum on Environmental Governance for the Ocean

CCICED member Mr. Jan-Gunnar Winther presented a summary of the discussion:

The biggest challenge ahead is how to feed 10 billion people by 2050. While the ocean has great potential, today only 3% of food comes from the sea. There are challenges to tapping into this potential. One-third of fisheries are exploited at biologically unstable levels.

China's challenges include overfishing, overcapacity, habitat destruction, pollution and competing uses of marine areas. China has made significant progress, but more is needed to sustain economic and environmental benefits.

The SPS recommends that China strengthen legal protection and restore marine ecosystems, implement high-tech monitoring systems to combat illegal activity, develop global partnerships, and evaluate ways to mitigate the impact of climate change.

Research shows 80% of pollutants come from land. The SPS emphasizes the need for an integrated science-based approach, highlighting the connections linking land and ocean.

d. Report on the Beautiful China 2035 Forum

Mr. Sun Youhai presented the following points from the discussion:

China is in the midst of an economic transition from its current energy mix. Looking to 2035, it is recommended that target setting be based on 19th Party Congress goals – that by 2035, there is significant progress towards a healthy environment and the realization of a 'Beautiful China'.

The recommendations call for compliance with protection measures, development goals and indicators for air, water, and soil pollution prevention and control. By 2020, there should be a steady trend to ecological environment improvement.

Public health should be at the core of environmental protection. Reaching the goals of 2035 also requires a change to the environmental governance systems and capacity building in order to improve the environmental governance capacity.

e. Report on the Green Consumption for Green Transformation Forum

Ms. Åsa Romson presented the summary of the discussion:

While China has achieved some results from the policy measures implemented to date, there are still problems with promoting green consumption. The discussion centered on what drives consumers, how to improve the environmental governance system, and how to make green consumption a priority in the government's promotion of green development.

The necessary data to analyze the issue relates to psychology and the understanding of human behaviour. Green consumption is about a whole-system change. There is also an important gender aspect as women and men are often responsible for different purchases and make different choices. Sustainable consumption and production are also often linked.

Our five recommendations include the need for clear, aligned goals and standards and a call for an inspiring narrative. Funding will be required, and there should be incentives on pricing and infrastructure to deal with end-of-life cycles.

General debate and comments

There is a horizontal theme emerging reflecting broader questions. This has been heard at meetings around the world – the call for integration of perspective. One issue that comes up is spatial planning, with a need to ensure all of these agendas are not perceived negatively. The type of spatial

planning required includes top-down and bottom-up strategies where the global, local and national work together.

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From 2013 to 2017, most of the investment has been focused on carbon energy, because banks are inherently conservative, they avoid risk. As a result, more than 90% of investment in BRI countries has been in fossil fuels. If this remains the case five years from now, this will be a serious problem. One way to assess whether or not progress is being made is to look at the NDCs of BRI countries. The NDCs need a lot of investment in renewable energy. It could be recommended that these data be examined and that targets be set to change the current investment ratios.

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It is unclear whether or not the concept of 'Beautiful China' include the ocean. The ocean should be encompassed in China's vision.

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In a world where there can be confusion about facts, it is important to have reliable information that is not skewed by politics. The Council may be adopting an old-fashioned view of risks by not including environmental and social risks. Perhaps there is an opportunity for the new green BRI coalition and the CCICED SPS on the BRI to incorporate non-financial risks into the larger framework.

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Concerning green consumption, there could be a suggestion to green government budget spending. In many countries, the government is the largest consumer and could change consumption and production patterns and create momentum for a circular economy.

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The Chinese government has invested trillions of dollars for the protection of the environment; as a result, good companies have survived, while the laggards won't. We also need to consider the changes in the world recently. Although there are many new technologies, we have not seen any major breakthroughs. Therefore, the Chinese government should encourage more research.

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China has an industry of $30 million annually from goods being built from bamboo. This is closely related to the circular economy and to low-carbon. Regarding the BRI, nature-based solutions are missing. The BRI should be an opportunity to create green corridors, and to promote integrated water-resources management as well as eco-tourism.

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China banning imported waste has turned into an opportunity for Australia, encouraging all levels of government to work together to improve waste management. In future work, it might be good for

CCICED to think more deeply about China's role in promoting sustainable consumption and production patterns, given its role in supply chains.

f. Report on the Forum on Addressing Climate Change Through Innovative Development Pathways

Ms. Kate Hampton provided a summary of the discussion:

Low-carbon development pathways, institutional innovation and climate governance were discussed. There is an intense urgency related to finding solutions and increasing ambition. Innovation is something people think about at the technical level, but it also refers to institutions, economics, business, consumer and behavioural change.

China has made impressive progress in the deployment of renewable energy, as well as productivity and economic efficiency. Conventional economic models systematically underestimate the rate of technological transformation possible, because costs tend to be overestimated.

The SPS recommends that coordination and ambitions need to be improved across strategy and planning, and there is an urgent need in institutionalizing co-management. Climate change targets must be integrated into supervision and accountability systems, and energy reform needs to accelerate, including strengthening controls on coal.

A new renewable energy policy framework is required to upgrade energy efficiency targets and standards. The principle of green and low-carbon development should be applied to all BRI practices, and a new global environmental governance system needs to be established.

g. Report on the Post-2020 Biodiversity Conservation Forum

Ms. Li Lin summarized the discussion and made the following comments:

The global population, economic activity, chemical emissions and fish depletions are all accelerating. The Living Planet Index shows that wildlife populations are down and have been for the past 40 years. By 2020, in just the next two years, it is critical to make a new global deal for nature. Science needs to be used to put pressure on business and government to make decisions with robust implementation over the next 12 years, so that the trend can be reversed and 2030 can see a turning point towards recovery.

The SPS considered three main areas: the post-2020 framework for biodiversity; case studies that can be instructive; and the conditions to encourage synergies. Champions for nature are needed. Countries need to rally and put nature high up on the political agenda, but increased public engagement is also urgently needed.

China should develop a robust framework for biodiversity conservation that supports ecological civilization here and in the world. China can use diplomacy to engage other countries on the global stage and encourage others to join the effort.

Common views from the forum included the notion that nature is deteriorating, and our efforts are not sufficient. Urgently needed are multiple environmental agreement synergies, political leadership, and conveying the relevance of nature to all stakeholders – especially youth who will inherit the earth.

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There was a call for apex targets to focus the collective effort, new innovative financing mechanisms, and the appointment of an envoy for nature. As well, there should be a focus on urban biodiversity. There is general agreement that China has a critical role to play.

h. Report from the Forum on Innovation-driven Green Urbanization

Mr. Lin Jiang summarized the discussions as follows:

The main aspects touched on were the purpose of urbanization, the critical challenges of rapid urban development, and how to accelerate innovation to change the present situation. China's rapid economic development cannot meet the needs of green growth today. The development of cities is part of the process, but not the ultimate goal. The purpose of urban development should be the well-being of citizens with a clean environment and a vibrant ecosystem.

Recommendations include the call to build cities in line with the needs of nature instead of controlling nature. Ideas include creating compact cities with transit-oriented development and encouraging the use of walking and bicycles.

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Also discussed was the role of innovation and the importance of pragmatic approaches. The use of air conditioners in China has increased substantially, and it is critical to develop better technology. If old air conditioners could be replaced by 2020, this could help reduce the temperature by 0.5 degrees and reduce the amount of carbon dioxide by about 450-million tons.

i. Report on the Forum on Green Development Innovation for the Yangtze River Economic Belt

Mr. Stephen P. Groff presented the summary of the discussion:

The YREB faces challenges of water degradation, regional and economic inequity, and climate change. The recommendation is to adopt a holistic, whole-of-ecosystem approach in environmental planning across the YREB. There is a need for transformative change to promote system-wide resilience.

A sound, integrated platform for the YREB is needed, as well as institutional cross-agency cooperation. This must involve authorities responsible for forestry, environmental, agriculture, development and water, as well as the private sector and civil society.

It is recommended to consider how to support digital integration and knowledge-sharing platforms, which can serve as a way of raising awareness. Some international lessons could be useful in this area. Another policy recommendation is to adopt a multi-stakeholder engagement approach that will identify any negative impacts on the community and enhance livelihoods.

There was also discussion on gender and the role of women in agriculture. Good governance and gender sensitivity are necessary to empower women and address inequality in the agriculture sector. Women must be represented in decision-making bodies.

The third policy recommendation is designed to incentivize the long-term financial sustainability for economic compensation and environmental programs in the YREB. There needs to be consideration of how the government can enhance its long-term commitment, but measures need to be developed to ensure robust business engagement.

The final recommendation is to establish legal and institutional mechanisms to facilitate enabling conditions for achieving the desired social, economic and environmental outcomes in YREB.

General debate and comments

The Council should consider how these policy research teams could join forces and consider new common standards. China, being a significant player in international trade, should think about how business can play a role in pushing and supporting low-carbon development. China can support a new way of thinking on trade, which would be particularly welcome in this period of trade wars. The best way is to share experiences and solutions for countries to help one another.

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It is commendable that some of the reports mentioned gender. The TNC has learned, belatedly, that when women have a voice, there is better progress. The CCICED should be a champion for gender integration. The BRI offers a high-profile opportunity to showcase how there can be improved biodiversity outcomes for lower costs. The Council should recommend that spatial planning be part of every project. However, too often the early stage integration doesn't happen.

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This is an unusual moment. Embedded in the presentations are powerful concrete steps. Special attention should be given to articulating this vision. President Xi Jinping and the Roman Catholic Pope Francis have both presented powerful, explicit visions of the environment. The challenge is the concepts are a bit abstract to fully capture the imagination of the public.

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Solutions already exist which can be put to use. For example, increasing forest cover can combat climate change, improve air quality, and help biodiversity at the same time.

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There needs to be a deeper understanding of biodiversity loss. Horizons should be expanded, and stakeholders brought together to increase protection. The impacts of China's consumption of palm oil and soybeans must be addressed.

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The YREB is essential to China at the strategic level. However, the Chinese government is lending much support to the development of the private sector in the area. There are concerns over emissions from private enterprises with low-emission standards, which are competing with state-owned enterprises. Private industries have more opportunities along the YREB. The key is to distinguish between polluting and environmentally friendly companies. The economy cannot be developed at the expense of the environment.

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The deterioration of U.S./China relations is of grave concern. Global peace and prosperity will depend on the ability of the U.S. and China to manage differences while cooperating on shared concerns. This is an urgent moment in history, and the two countries need to work together for the sake of the world.

6. Plenary Session

a. CCICED Work Report and Work Plan

CCICED vice chairperson Mr. Achim Steiner, brought the plenary session to order, introducing Mr. Zhao Yingmin, CCICED Secretary General and MEE Vice Minister, to present the CCICED 2018 work report and its 2019 work plan. Here is a summary of his remarks:

During 2018, SPS team leaders took part in a number of roundtables and work meetings. The Council also explored gender mainstreaming with partners such as the Canadian government and others. A BRI roundtable was organized. Training and workshops were held. The Secretariat received advice from universities and other education partners.

The CCICED Executive Committee approved the work plan for 2019. The theme for the year will be 'A Green Prosperous New World'. Several concept papers on new research have been developed, under the four Phase VI Task Forces on global governance; green urbanization; sustainable production and consumption; green energy investment and trade. Work will continue to consider marine governance and eco-civilization.

During the year, meetings will be held to review the work and collaborate with international partners on green consumption, gender mainstreaming and the protection of biodiversity. There will be enhanced efforts to increase awareness of the CCICED's work and deepen collaboration with partners.

Gender equality will be included in every aspect of CCICED's work. As of April 2019, at the suggestion of our Canadian partner, the Council will appoint Scott Vaughan as the next international chief advisor. There will also be increased efforts to enhance the Secretariat's functionality and support of the Council and increase the coordination between the Secretariat and the new Canadian organization designated as International Secretariat Support Office.

b. Draft Policy Recommendations

Session chairperson Mr. Achim Steiner invited international chief adviser, Mr. Art Hanson, to present the revised draft of the policy recommendations. He made the following remarks:

This draft integrates comments received from participants. It is a long draft, which reflects the richness of the discussions to date. The final version will still be a long document.

But a short version is needed for the state council. It is suggested the long draft be preceded by a brief summary, which will be shaped to be well received by the government while also reflecting the richness of the recommendations.

There are difficult issues to tackle as China moves into this new era, but the CCICED must put forward its recommendations. There is some reluctance to do this, for example, in discussing the altered ban on rhino and tiger parts, and the impact this has on how China is viewed globally.

At present, there is a good balance; the text is not avoiding issues, and new ideas are brought forward.

CCICED special adviser Mr. Knut Alfsen, former head research director at Norway's Center for International Climate and Environmental Research, made the following comments on the draft policy recommendations:

Some 20 comments were received. To preserve the richness of the proposals, there is a need to avoid losing focus.

While not every suggestion was explicitly added, roughly 80% is reflected in the document. Some may complain that their wording has not been included, but the ideas are most likely reflected in the document already.

CCICED Chinese chief advisor Mr. Liu Shijin added the following points:

There is still time for participants to provide their feedback. The purpose is to reflect participants' views as much as possible while focusing on the key issues. The fact that China may be facing downward economic pressure due to burgeoning trade wars was brought up.

The good news is that China now sees environmental protection as a plus. People are willing to pay more for green production, financing and logistics. Some ecological measures are in themselves new growth drivers for the economy.

It has also been said that during the green transition, legislative protection is essential. There is a need to rely to a greater degree on the rule of law and legal procedures, along with economic measures, such as carbon trading. It is also essential to increase the use of technology.

General debate and comments

Many technologies offer benefits, but for various reasons, these technologies are not widely used. One Chinese company provides 75% of renewable energy in China. During the day it draws on solar power, and in the evening, hydro. The coal fire plants have an optimal level of operation, but some of the plants are run at inefficient levels to ease power output, which is not environmentally friendly. It is not rocket-science to control the use of coal and promote the use of renewables.

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The CCICED started with a domestic focus but has turned to broader international questions in the last few years. With international experience, China is advancing quickly. Perhaps China's results could be used elsewhere in the world.

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Clean coal was not proposed by the SPS to be included in the recommendations – yet it is in the present document. This is an important issue to raise because a lot of the debate over the BRI centers on whether there is such thing as clean coal.

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Technological innovation is a big factor. There is a need to integrate environmental concepts from the very initial steps in designing a project or a product. The entire lifecycle must be considered and given systematic support to ensure we capitalize on green technology.

7. AGM Concluding Session

CCICED Executive Vice Chairperson, Mr. Li Ganjie, presided over the closing session, introducing vice chairperson Mr. Xie Zhenhua, who made the following remarks:

Only through innovation and consumption changes can we meet our goals. Examples are crucial and can contribute to protecting our environment. The Council needs to focus on China's priority areas within a given timeline.

Council suggestions could play a more critical role. If recommendations are included in the government's five-year plan, that will be significant. The CCICED, as a high-end think tank, contributes through its policy recommendations. Council members and experts have used CCICED as a valuable platform, and it has played an important role over the years.

Vice Chairperson Erik Solheim made the following remarks:

China moved its people out of poverty in a single lifetime – this is unprecedented in human history. China can do the same with the environment. Political leadership is what will drive this movement. China's all-out war on pollution needs to be taken to the rest of the world.

Today, the population of China is more than the combined population of Africa. By 2050, the situation is expected to reverse; Africa cannot absorb this population without urbanization. There are opportunities and challenges for Africa. China is a world leader in electric mobility, and this is needed in Africa.

A new deal for nature is needed. It is essential to take much better care of mother earth and foster a better balance between humans and nature.

Vice chairperson Zhou Shengxian made the following closing comments:

China has moved into a critical period, and it is vital that the war against pollution be won. CCICED was set up to address the problems in China, but as time goes on, China has more to offer. Perhaps in the future CCICED can use two-way communication to convey China's successes.

Policy recommendations need to take into account when the Chinese government is making decisions. The CCICED needs to carefully select topics and strengthen our connections to women and young people.

Vice chairperson Vidar Helgesen made the following remarks:

The world is facing an imperative on three fronts: ecosystem-based ocean management, an international investment such as the call for consistency in applying the principle of green and low-carbon development in BRI, and international trade. Progress and synergies are needed on all fronts. To make progress, solid leadership and sound policies will be called for in the coming years.

Vice chairperson Achim Steiner closed the meeting on behalf of executive vice chairperson Catherine McKenna and offered the following thoughts:

Every year the China Council is a reality check on the progress taking place in China, but always against a global context. It is essential to recognize how much this increasingly global perspective permeated the SPS reports and the AGM discussion.

The drivers for economic transformation are rooted in the green change. Notwithstanding China's leadership role here, these themes are being pursued elsewhere in the world.

China in 2018 is not just a 'business as usual' moment. There is a greater need to understand how to maintain momentum. There were calls for spatial planning, the need to start early with green design, and to transit to another kind of economy.

China has the ability to be a stabilizing factor in important environmental agreements. In moments like this, calm and stable leadership is more critical than ever.

Executive vice chairperson Li Ganjie concluded the AGM and thanked participants for their thoughts as well as the contribution of their expertise to the Council. He made the following comments:

The policy recommendations are visionary, practical and applicable, and make the case for further development of the CCICED. There is change not just in China, but around the world. There are uncertainties, but China is determined to win the war on pollution and committed to meeting its goals.

Mr. Li Ganjie concluded the 2018 AGM, thanking the speakers for their comments and participants who contributed their time and expertise to the Council.

III. 2017 CCICED Policy Recommendations

1. Overcoming global shocks while creating green opportunities

The world faces a future likely to be ridden with shocks of many types. Many will involve environmental risks. Important nations seek to withdraw from environmental and other international agreements; trade wars can influence global climate change; biodiversity loss affects poverty reduction. Through innovation, cooperation, and strong political will, responsible nations and the international community must ensure a sustainable and prosperous future for all. That is the fundamental premise of the UN Sustainable Development 2030 Goals (SDGs 2030). Yet as noted in an October 2018 report by the Intergovernmental Panel on Climate Change, the window of greatest opportunity is closing fast for transformative change regarding matters such as climate change mitigation, stemming biodiversity loss, and securing sustainable consumption.

China already is a very significant player in green development, but global progress is also dependent on other nations. Therefore, the 2018 CCICED Policy Recommendations to the State Council focus on how China can share its environment and development experience, help to accelerate progress on living within planetary ecological and environmental boundaries, and take on greater leadership in bolstering global green governance.

In this 40th Anniversary year of Opening Up, and at the start of a New Era, China has put in place a range of important environment and development policy shifts that will have lasting positive impacts not only for China but also globally. CCICED Members welcome China's strong political commitment to building an ecological civilization by 2035, the significant progress in the War on Pollution, the shift towards an ecological emphasis in development, the import ban on some plastics and other waste materials, the building of a national park system, and institutional strengthening especially in the new functions assigned to the Ministry of Natural Resources and the Ministry of Ecology and Environment.

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CCICED Members also welcome China's enhanced role in supporting and sometimes leading global environmental governance improvements, including its strong commitment to the Paris climate change agreement, participation in the UN 2030 Sustainable Development Goals and support concerning SDG2030 action plans of others, efforts to green its Belt and Road Initiative (BRI) and South-South Cooperation. CCICED Members also believe that it is timely for China to take a stronger role in global ocean sustainability including helping to reduce the plastic and pollution burden of the oceans, and to accelerate efforts under the Global Convention on Biological Diversity (CBD) and other global and regional agreements. Clearly, the world needs a prominent torchbearer to successfully secure innovative paths towards a healthy planet.

The great challenge now for China is to sustain and deepen its domestic progress while at the same time linking it to international efforts. This is necessary to secure a Beautiful China and a Healthy Planet for future generations. China can exert various kinds of international influence: leadership by example; leadership via resources such as knowledge and financial support; and leadership in coalitions and partnerships. Time is of the essence.

Ecological civilization is an inspiring vision that will govern policies of many types in China's New Era. However, it is a concept that is at an early stage of understanding in other countries and globally. Now is the time to introduce this important approach to the world with the aim of seeking synergies with global, regional and other national concepts and strategies of other countries in the interest of sustainable development. By securing full public participation regarding ecological civilization, the pathway to a Beautiful China can speak to our hearts as well as our minds.

2. Specific Policy Recommendations

Recommendation 1. Upgrade China's contribution to global climate governance through enhanced action on climate change mitigation within China

The recent IPCC Special Report on Global Warming of 1.5°C tells us that the gap between action taken since the Paris Agreement and needed global action to avert catastrophic climate change is larger than previously thought. Domestic efforts and international collaboration must, therefore, be intensified with urgency. Innovation will be needed at the systems level—not only technological innovation but also institutional, policy, economic, business model, consumer and behavioral innovation.

Given China's impressive progress so far, it is now evident that China's greenhouse gas emissions can peak earlier and at a lower level than previously thought. Action on climate change can play a useful role in promoting financial stability, poverty alleviation and pollution control, as well as supply side structural reform.

China's ability to be a torchbearer internationally on climate change and provide a model of Ecological Civilization for the world will depend upon the government's ability to ensure policy coherence across multiple domains: environment, energy, industry, transport, urbanization, agriculture, land use and natural resources, as well as consistency in applying the principle of "green and low carbon development" in international cooperation, particularly in the Belt and Road Initiative. To capture the opportunity of recent Chinese institutional reforms, the government should:

1. Institutionalize an effective coordination mechanism, led by the National Leading Group for Climate Change and Energy Conservation and Emission Reduction, for harmonizing action on climate change with multiple strategic goals, based on increasingly ambitious plans in the short term via the 14th Five Year Plan, in the medium term via a revised Nationally Determined Contribution for 2030 and Beautiful China 2035, and in the longer term via a 2050 Strategy. This will require well-defined targets and timelines as well as pathways for policy reform including the reform of State-Owned Enterprises including the State Grid and building a well-functioning national emissions trading system.

2. Provide a strong institutional basis for co-management of climate change and air pollution and synergy with other environmental issues across the dimensions of regulation, data transparency, monitoring, enforcement, supervision and accountability. Climate change targets should be incorporated into the existing environmental protection supervision system led by the Central Committee of the Communist Party of China Environmental Protection Supervision Committee. Local capacity building will be essential.

3. Tighten coal control policies and the promotion of renewable energy and energy efficiency. Specifically, China should end coal quotas and long-term contracts, control industrial coal use and help coal-dependent provinces to transition to other sources of prosperity. In a context of reducing renewable energy subsidies, a new renewable energy policy framework is needed to overcome non-financial barriers to renewables, deploy energy storage and smart grid solutions as well as distributed renewable energy. Renewable energy subsidies which had already been agreed upon should be fully paid. In terms of efficiency, China is well positioned to lead in the implementation of the Kigali Amendment to the Montreal Protocol by introducing world-leading standards for domestic and exported air-conditioning and demonstrate centralized cooling at scale. Also, focus on nature-based solutions (see 'synergies' below), emissions from agriculture, as well as emissions of methane, black carbon and HFCs whose mitigation can achieve significantly reduced rates of warming in the near term, which would affect the rate and degree of adaptation.

Recommendation 2. Play a strong leadership role in developing effective post-2020 global biodiversity goals under the Convention on Biological Diversity (CBD)

The Global Convention on Biological Diversity has failed to meet conservation targets set in 2002 and 2010. As in the case of climate change, the window of opportunity to stem major biodiversity and ecological service losses is rapidly closing. The 15th Conference of the Parties (COP15) will be hosted by China in 2020. By joining efforts with like-minded countries and players, China can help to set new goals covering the period to 2030 and beyond. This event is a major opportunity to set a new course in global green governance, and a platform to demonstrate China's commitments and achievements towards becoming an ecological civilization and actively participate in biodiversity and ecosystem global governance. By joining efforts with like-minded countries and players, the desired outcome would be to dramatically reduce biodiversity losses in all parts of the world. COP 15 is a major opportunity to accomplish four objectives noted below.

1. Make all efforts and demonstrate leadership in the development of an ambitious, robust, and internationally agreed post-2020 global biodiversity framework, with measurable targets. Carefully assess the factors which have led to the failure of past frameworks. Hold consultations with stakeholders, including those not traditionally involved with conservation, including business leaders and others involved in the development and implementation of ecological services and biodiversity conservation. Stakeholders from the south and megadiversity countries should be deeply and widely involved in the consultation process. China should take the lead on these consultations in collaboration with the CBD Secretariat.

2. Establish an effective mechanism to ensure that the CBD strategic goals can be achieved on schedule. The active participation of business, civil society and all actors in society is critical. Build up creative implementation mechanisms, periodic review and ratcheting instruments, to continuously increase ambitions of Nationally Determined Contributions (NDCs), as well as contributions by other stakeholders. Actively communicate and align with other international agendas including climate change and ocean governance, and capture synergies with them.

3. Showcase China's experience in biodiversity conservation for reference of the international community and engaged Parties. Actors such as IUCN, WWF, TNC, INBAR, ClientEarth, and others can help in effectively communicating these success stories. Focus on China's domestic

and global initiatives into the dialogue and engagement with other governments, including but not limited to ecological civilization, redlining, green finance, natural resource assets accounting, and auditing, strengthened ecological law enforcement, national park-centered natural conservation systems and mainstreaming biodiversity concerns into other sectors. Remember that space outside of protected areas will also need to be managed in a sustainable way. Spatial planning for infrastructure or renewable energy should be done in a way trying to avoid, minimize or offset adverse impacts.

4. COP15 will cast a spotlight on the overseas impacts of China's investment and trade. China should be ready by taking immediate steps to green the Belt and Road Initiative (see section 4 below) and to reduce climate and biodiversity impacts from imports of commodities such as timber, palm oil, soy beans, and fish. For example, it could adopt supply chain standards for its public procurement that avoid deforestation by integrating 'deforestation-free' criteria into the Green Public Procurement program. Chinese state-owned enterprises could make similar commitments. Another important step would be to adopt standards for all timber products that China imports.

5. Build successful and on-going engagement involving heads of state. There is a need for proactive outreach linked to a proposed Heads of State Summit at the UNGA in 2020, and to build a groundswell of support for the significance of the COP15 event similar to what occurred in the Paris Climate Change COP held in 2015. Steps could involve the following elements:

    a. Engage with the CBD Secretariat to provide a positive signal and to begin the preparations of the Summit at UNGA 2020.

    b. Respond or proactively reach out to various heads of state of countries that could potentially form a "Coalition of Champions for Nature" together with China, through various diplomatic tracks, and informal processes.

    c. Prepare a series of nature, environment and biodiversity-related events in China and at the global stage in and leading up to 2020 to set up springboards and milestones leading up to the COP15.

    d. Pay special attention to the links between the CBD and the SDGs, especially those related to social development and various aspects of gender mainstreaming.

    e. Recognize that leadership actions abroad will come from many different players, including international bodies, non-government actors such as business, financial institutions, and the general public. Support a multi-stakeholder nature action agenda that mobilizes leadership from such actors to complement the official COP15 process. Support new narratives and communication strategies that are more effective at mobilizing such actors; for example, replacing the word 'biodiversity' with 'nature' where appropriate.

    f. Establish international cooperation on wildlife and ecosystem protection with neighbouring countries and investment and trade partners.

    g. Appoint a Special Envoy for Nature for preparations of COP 15 and beyond.

Recommendation 3. Develop an ecological civilization approach for China in national and global ocean governance

Marine ecosystems are threatened in many parts of the world's oceans amid worries of unsustainable levels of fishing and marine aquaculture, coastal and offshore habitat destruction, mounting levels of pollution, climate change impacts, and limited efforts on creating marine protected areas and biodiversity conservation. The complex multi-institutional global governance system is fragmented and not well-suited to address modern issues such as plastics pollution, coral reef die-off and ocean acidification. China faces an emerging crisis in its coastal and marine ecosystems wrought by factors such as those mentioned above. Furthermore, through its distant water fleets and seafood imports, China has great influence on marine ecosystems in many parts of the world.

By taking an ecological civilization approach and further building a circular economy, China can pursue a path of harmony between people and the ocean, promote conservation and green ocean development, and enhance ocean-based prosperity. This approach will require a comprehensive, ecosystem-based, integrated ocean and coastal management approach as a means to ensure the necessary balance between ocean ecology and economy for China's own marine and coastal future.

Recommendations related to biological resources:

1. Strengthen legal protections for coastal and marine ecosystems, while promoting sustainable production. China should enact a new aquaculture law that emphasizes best practices and places clear limits and strict enforcement on waste discharge. The law should set out science-based carrying capacity limits that can be incorporated into China's National Marine Functional Zoning. The law should mandate stock reporting by all facilities, authorize routine onsite inspections, and include other provisions that mitigate impacts including those arising from the use of antibiotics or other chemicals.

2. Implement a high-tech monitoring system for marine science assessments to combat corrupt and illegal activities and that will highlight responsible fisheries, habitat and environmental protection. Such a system will enable China to expand monitoring to nearly all of its domestic fishing vessels, landing sites, aquaculture facilities, and coastal and marine protected areas.

3. Develop a national plan of action to restore lost marine ecosystem functions and services. Protection and remediation of coastal wetlands and their ecological functions should be secured including water purification, carbon sequestration and nursery areas for marine life. The plan should include actions governed by the Ministries of Agriculture and Rural Affairs, Ecology and Environment, and Natural Resources, as well as coastal provincial and local agencies.

4. Establish a national "marine ecological report card" on the health of China's coastal and marine ecosystems. The report should assess the integrity of key ecosystem functions and services and the cumulative effects of the intense uses of China's living marine resources by fisheries and mariculture, and the impacts of pollution, development, tourism industries and climate change. The report should be made publicly available and regularly updated.

Recommendations related to marine pollution and coastal habitat issues:

1. Establish an effective mechanism of river to sea coordination for marine pollution prevention

and control. There are several matters to be addressed. The need for: (i) improved real-time monitoring of primary rivers and outlets discharging into the sea; (ii) improving the connection of water quality standards between surface fresh water and seawater; and (iii) an integrated governance mechanism between the Lake and River Chief System and the Bay Chiefs.

2. Construct an integrated coordination mechanism for marine debris prevention and control across sectors, regions and river basins. Formulate a national action plan for marine debris pollution prevention and control. Strengthen lifecycle management for plastics and encourage extended producer responsibility. Significantly reduce unnecessary use of single-use plastics. Ban production and sale of personal care products containing plastic micro-beads. Speed up the research and application of innovative approaches for substitution of plastic products and for waste treatment. Recognize the need to mobilize partnerships for action on plastic pollution and invite such a platform to take shape in China. The recently signed accord between China and Canada on reducing plastics affecting the ocean is an excellent example.

3. Establish one or more regional blue partnerships to jointly address marine pollution issues relevant to Asia and the Pacific and make the best use of relevant existing efforts in the region.

4. Strengthen Chinese research on emerging marine environmental issues of global concern. Priority topics include ocean acidification, ocean plastics and microplastics, oxygen deficiency in hotspot areas, and other emerging marine environment issues of global concern, particularly in the high seas and Polar Regions.

Recommendation 4. Carry out the greening of the Belt and Road Initiative (BRI)

China has impressed many in the world with the Belt and Road Initiative, which aims at strengthening the economic and social conditions across much of the developing world. With its strong emphasis on infrastructure, the BRI requires careful consideration of climate impacts and long-term ecological changes. Environmental impact assessments with public participation should be at its core. While the scale of existing and planned BRI activities is very substantial, publicly available information is inadequate. To help in the selection and design of projects, there should be alignment of BRI initiatives with the Paris Agreement, global biodiversity targets, and the 2030 Agenda for Sustainable Development. China should apply internationally agreed environmental and social safeguards, transparency rules and public participation at an early stage of planning, to reduce environmental and social risks. Several policy recommendations are proposed:

1. Strengthen and link long-term mechanisms for greening the BRI, including:

    a. Boosting existing international platforms such as the Green BRI coalition and the China-ASEAN Environmental Center.

    b. Make sure global commitments to climate change, biodiversity conservation, and sustainable ocean use are respected throughout projects in the BRI.

    c. Start from project level on greening the BRI (bankability, social acceptance and impact, environmental impact) and learn good and bad lessons from the completed projects.

    d. Commission independent feasibility studies and economic, social and environmental impact evaluations as well as solicit the views of the local public. Recruit independent review and

verification experts and secure information transparency.

e. Launch a 'Greening cities along the Belt and Road' initiative, which can seek low hanging fruits and quick wins considering the amount and diversity of expertise available from the greening of Chinese cities.

f. Create a network of partnerships among countries along the Maritime Silk Road to promote sustainable marine governance and achieve the SDGs. Key topics could include managing marine resources sustainably, promoting ocean-based economic development including green harbors, improving food security for vulnerable peoples, combatting illegal fishing and building the capacity of women in fishing communities and supply chains.

g. Implement gender mainstreaming as part of best practices in BRI projects; and share gender mainstreaming approaches and lessons learned with BRI partner countries.

h. Provide support to national environmental agencies along BRI on human, technical and scientific capacity building and launch support for communities and civil society engagement into BRI initiative in the participating countries.

i. Create a Network of Environmental Innovation Hubs with a physical presence in BRI recipient countries. Such a network could provide knowledge transfer, capacity-building sites supporting national development plans, and as local contributors to a BRI-wide database of social and environmental information about projects.

2. Give priority to green project financing.

The development of green finance not only needs the support and facilitation of government, but also necessitates the positive contribution from financial institutions, including enhancing investment in low-carbon industries, improving the transparency and environmental information disclosure of businesses, and providing green financial products for consumers.

a. Establish a 'BRI Ecology and Environment Big Data Platform' which is publicly accessible, for broad information disclosure and to serve as a basis for better assessment of the environmental risks of BRI projects.

b. Set mandatory requirements for responsible investment overseas to enhance social responsibility in Chinese corporations (replacing the current voluntary guidelines for responsible overseas investment).

c. Develop a political risk insurance vehicle that can work with both Chinese and foreign banks to help mobilise sufficient capital.

d. Facilitate the application of Public Private Partnerships (PPP), giving priority to programs with notable ecological and environmental benefits.

e. Support the development of platforms for sharing knowledge and experience in green investment such as the Global Green Finance Leadership Program and the Sustainable Banking Network.

f. Launch a 'Greening the BRI' fund to test and demonstrate the business case for selected

sustainable Belt and Road infrastructure investments.

3. Design and implement a green arbitration mechanism for Belt and Road projects.

Recommendation 5. Strengthen performance of green development in the Yangtze River Economic Belt (YREB)

The YREB idea is distinctive and represents a significant new way of approaching river basin management for China and indeed possibly the rest of the world. The YREB is a prime candidate to become China's leading experiment for construction of an ecological civilization.

1. Adopt a Whole-of-Ecosystem Approach (from 'Mountain to Ocean') in environmental protection planning across the Yangtze River Economic Belt.

   The following areas are important elements to facilitate and support this approach in the YREB:

   a. Strategically focus remediation and restoration efforts on problems that have disproportionately large impact on the overall river basin health. Two areas that require special attention are solid waste management in rural areas and plastic pollution. Positive outcomes can be achieved by the following actions: (i) continue efforts to reduce the volume of solid waste pollution, especially hazardous wastes, micro-plastics and rural waste, which cause serious water pollution from upstream and downstream areas through to the oceans; (ii) develop economic incentives for collecting and disposing solid wastes through innovative technology and raising awareness through community engagement; (iii) promote the recycling of waste materials and reduce the incineration rate, especially for rural agricultural and domestic waste; (iv) improve livestock and poultry farming pollution control measures to reduce the pollution load to water bodies; (v) improve the performance of wastewater treatment plants and treatment of sludge; (vi) pay more attention to social concerns through public awareness campaigns on solid waste treatment and recycling activities to avoid 'not in my backyard' conflicts.

   b. Adopt a multiple stakeholder engagement approach to carefully identify and address any negative impacts on communities and livelihoods. Integrate gender via a multiple stakeholder engagement approach to good governance. Gender inequalities can limit agricultural productivity and efficiency and in so doing, undermine development agendas and the potential to achieve an ecological civilization.

   c. Design institutional frameworks to incentivize long-term financial sustainability for ecological compensation and environmental protection programs in the YREB. Current transfer payment schemes are not financially sustainable in the long term.

   d. Development of both compulsory and voluntary instruments will best ensure robust business-sector participation in conservation finance. Development offsets are the most successful example of compulsory approaches internationally. This approach is well suited for China, which has already laid the groundwork via its key ecological function zoning system. In terms of voluntary approaches, "pay-for-performance" contracts hold significant promise since these only require a contract between two parties. The government should play a key role in establishing the scientific basis for such contracts.

e. The government should continue to focus on improvements in monitoring of watershed ecosystem services and should make this monitoring data available to the public. Existing government programs (e.g., eco-compensation) should be expanded to include pathways for business sector investments.

f. Establish appropriate legal and institutional mechanisms. The Yangtze River Protection Law (YRPL) should clarify rights and responsibilities over all river basin management work. It should also clarify frameworks for cross-provincial and cross-sector coordination and cooperation.

Recommendation 6. Lead green urbanization through technology, planning and policy innovation

It is estimated that there is still over 20% increase potential for urbanization in China by 2050, i.e., an additional 300 million urban population, roughly equivalent to the current population of US. How this urbanization is realized and how the existing urbanization achieves its green transformation will have significant impacts on China's future, and important implications for global development. With the emergence of a digital and green era, substantial changes of modality and pathway for future urbanization are envisaged, including content of development, spatial layout, infrastructure, transport, and logistic system, business and organization approach, institutions and policies. Innovations and explorations are especially needed to promote green urbanization. Besides technical aspects, such innovations also involve mindset, theory, development content and approach, organization and business model, institutional mechanism and policy. Therefore, breakthrough and innovation in the following key areas are recommended:

1. Fully recognize the impact of the digital age and green development on urbanization mode and avoid using old mindsets for green urbanization planning. Green urbanization does not simply mean buildings, plans and green technologies, but is rather supported by deep transformation of development content and approach. Both market and society should play key roles in determining urban layout and planning.

2. Integrated urban and rural planning. Fully incorporate green standards into urban-rural planning through the free flow of urban-rural elements and urban planning. Integrated urban and rural development must be considered in the development of green urbanization plan and relevant policies, with comprehensive consideration of impacts on the rural economy, ecology, society and culture. Meanwhile, encourage the flow of urban talents into the countryside. Gradually open the right of renting and use of rural housing land to urban residents with proper conditionalities.

3. Promote some green technologies that are economically and technically feasible and have major impacts to unleash their potential in energy saving, emission reduction and industrial upgrading. For instance, energy saving technology for indoor air conditioner could be a possible breakthrough. In 2017, the annual Chinese production of indoor air conditioners accounted for 70% of global production, with capacity equivalent to the total solar energy capacity increase in that year. Chinese air-conditioning companies have the technical and economic ability to produce air conditioners with energy efficiency 200-300% higher than the global average. However, such potential is hard to realize due to lack of energy efficiency standards in China.

4. Because of the different economic development and natural endowments in different places, the green urbanization process in each place will be different. Therefore, China should give full play to the local spirit of innovation with respect to infrastructure construction, transportation and logistics systems, institutions and policies related to green urbanization. Nature-based solutions to such challenges as intensive storm-water flooding, sea-level rise/storm surges, enhanced urban heat should be evaluated, considered and adopted, as appropriate, to complement traditional energy-intensive built infrastructure in China's cities. Green construction using bamboo is another example. As it is now doing with the Sponge City Program, China has a chance to create innovative models for the coming urban century and taking them to scale to address the needs of an increasingly urbanized society.

Recommendation 7. Find and address synergies among issues

Most of the issues mentioned above are strongly interlinked. Some actions can be taken which contribute to two or more areas of importance. Fully recognising such synergies is particularly important because they lead to double or triple wins. For example, 'Nature and Climate Solutions' can achieve both climate and biodiversity goals. Globally, such solutions can achieve up to a third of the Paris commitments. Quality reforestation, investments in mangroves and coastal wetlands, and investments to protect watersheds can all be designed to enhance carbon sequestration and optimize biodiversity outcomes while providing additional ecosystem benefits such as flood protection and soil retention. Many actions will help both oceans and biodiversity. For example, reducing overfishing, improving aquaculture management, and restoring coastal and marine habitats can improve the value of seafood production, restore critical ecosystem functions, and protect and restore biodiversity.

Another example is that making rapid efforts to reduce the climate, biodiversity and ocean impacts of the Belt and Road Initiative will strengthen China's position ahead of its hosting of the CBD COP15 in 2020. And making efforts to reduce the environmental impacts of trade and investment (such as destruction of overseas rainforests for palm oil or soybean production) will have important biodiversity and climate benefits. The 2020 COP provides an opportunity for China to drive synergies between climate, ocean and biodiversity targets. In doing so, China can and will inspire other countries to take similar initiatives.

Broadly speaking, early spatial planning and structured public participation can often produce results which avoid, minimize and offset adverse social, ecological and climate-related impacts. Such efforts are beneficial to government and business in that they can produce regulatory certainty, minimize project-related risks, and ultimately reduce costs. Synergies that result in new, green livelihoods should be encouraged.