China Council for International Cooperation on Environment and Development

CCICED Issues Paper 2019

The Shift to High-Quality, Green Development

1. China's Five-Year Plan

The 2019 Annual General Meeting of CCICED is an important opportunity to share recommendations from the Council about the preparation of China's 14th Five-Year Plan, which will cover the years 2021 to 2025.

China's system of Five-Year Plans is of strategic importance for its domestic as well as regional and multilateral objectives. Five-Year Plans identify key development and social objectives, market condition assumptions, strategic sectors, priority geographic areas, quantitative targets and other themes, pathways and directions.

In late 2018, the National Development and Reform Commission (NDRC) of the State Council[1] reviewed progress in implementing the current, 13th Five-Year Plan (which covers the years 2016–2020). The NDRC review underscored the preeminence of high-quality development as an overarching goal. It also noted a number of crosscutting priorities, notably social well-being, innovation-led development, supply-led structural reforms, the expansion of the services sector, and environment and sustainable development. Several areas of ongoing environmental progress were highlighted in the late 2018 review, including in freshwater management, the decoupling of energy consumption per unit of Gross Domestic Product (GDP), the reduction of carbon dioxide emissions per unit of GDP, and forestry. It also noted challenges, including air quality, urban water quality and soil contamination.

[1] The State Council is responsible for preparing the draft Five-Year Plan, with its National Development and Reform Commission (NDRC) coordinating input from all levels of government, ministries and agencies. The final draft of the 14th Five-Year Plan will be debated and adopted by the National People's Congress.

2. Shifting Lanes: High-Speed to High-Quality Development

As noted, China has initiated a strategic shift away from high-speed (or rapid) economic development towards high-quality development. High-quality development encompasses green development, which goes beyond environmental protection and pollution abatement to include drivers like innovation, factor productivity enhancements through efficiency advances, well-being and the expansion of cleaner systems—from energy and mobility to green finance—and the expansion of the services sector more broadly.

China's record of high-speed development has been remarkable. In the last four decades, the Chinese economy has expanded 30-fold. The structure of growth continues to shift towards higher-value-added economic activities, reinforcing the prominence of innovation and productivity advances. In 2014, China surpassed Japan and the European Union to become the world's second-largest research and development (R&D) performer (Organisation for Economic Co-operation and Development [OECD], 2018). Today, China is the world's largest producer of computers, robots, high-speed trains, cell-phones, appliances and other high-value goods produced within global supply chains, as well as lower-value-added outputs like crude steel, cement and coal.

a. Rapid Growth, High Environmental Externalities

China's high-speed development has lifted millions from poverty and into the middle class. Yet the environmental costs have been exceptionally high when measured by rates air pollution, freshwater pollution, soil contamination, the depletion of natural resources, the loss of habitats like coastal wetlands and the extent of greenhouse gas (GHG) emissions. Today, China is the largest net GHG emitter and is among the highest per-capita emitters.

b. The War on Pollution

China's response to its environmental challenges has been comprehensive, ambitious, sustained and innovative. Environmental protection is one of three national "tough battles" (together with preventing and diffusing financial risk and alleviating poverty). Its "war on pollution" continues to be strengthened. Recently, Premier Li Keqiang reported that China spent approximately RMB 255.5 billion (approximately USD 38.1 billion) in 2018 on pollution abatement programs, an increase of 14 per cent from the previous year. Four recent initiatives underscore China's increasingly ambitious domestic environmental commitments:

a) The 2018 introduction of a national environmental tax covers some 260,000 enterprises;
b) The ongoing phase-out of inefficient coal-fired electric utilities and application of emission-based performance standards for new facilities;
c) The ongoing strengthening of regulatory enforcement: in the first 10 months of 2018, 30,000 violations were reported; some RMB 11.8 billion (USD 1.71 billion) in fines were levied; and 6,500 alleged violators were detained; and
d) Work towards the launch in 2020 of the world's largest carbon market based on an emissions-trading system (ETS), with initial coverage of the electricity sector.

More attention is being placed on aligning stringent domestic environmental action with regional and multilateral action. The Paris Agreement and subsequent steps forward would not have happened without China's global leadership. China has noted the importance of aligning a green Belt and Road Initiative (BRI) with the Sustainable Development Goals (SDGs): in late April 2019, the Belt and Road Green Coalition itself included welcome action with BRI green platforms for cooling, lighting and big data. Looking forward, China will host the 2020 UN Convention on Biodiversity Conference

of the Parties—an important juncture given the end of the Aichi Targets, the release of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report (see below), and the importance of leading an urgent, ambitious global agenda to protect nature.

c. Divergence: Economic Slow-Down and Environmental Action

China's commitment to environmental protection—remarkable in its own right—is all the more noteworthy given slowing rates of economic growth. The International Monetary Fund (IMF) [2] forecasts an annual growth rate of 6.2 per cent in 2019 and again in 2020 (IMF, 2019b), down from a 6.9 per cent growth rate in 2017 and 2018, and well below the remarkable double-digit growth rates of previous years. Yet, in the face of a decelerating rate of economic growth, China's environmental actions are increasing: during the 13th People's National Congress in March 2019, senior leaders announced that both sulphur dioxide and nitrogen dioxide pollution emission targets would be tightened by an additional 3 per cent. Actions to further cut the concentration of particulate matter ($PM_{2.5}$) are ongoing.

This strengthening of environmental action marks the divergence from past cycles, in which economic slow-downs have tended to prompt an easing of environmental commitment, usually the result of misplaced concerns about job or competitiveness losses associated with green actions (Bowen and Stern, 2010). It also points to progress around the green development agenda—for example, the OECD and others have shown a neutral or marginally positive correlation between jurisdictions with ambitious climate mitigation policies and rates of economic development (OECD, 2017).

Yet China's actions are reshaping the green development agenda itself, not least because of its leadership in framing green development and high-quality development within a broader, value-based vision of ecological civilization.

3. Ecological Civilization and High-Quality Development

In a March 2019 meeting with Delegates of the Inner Mongolia Autonomous Region, President Xi Jinping described the region's forests, grasslands, wetlands, rivers, lakes and deserts as comprising a "comprehensive ecological system that should not be sacrificed to economic growth." Protecting those assets required "strategic resolve." The vision of ecological civilization, which continues to evolve, encompasses avoiding environmental destruction and, in so doing, realizing the prosperity associated with key ecosystems. The dual emphasis of ecological civilization was further articulated in a 2018 speech by President Xi: "Ecological advancement leads to civilization prosperity whereas ecological deterioration leads to civilization decline."

Ecological Loss and Wider Decline: This connection between ecological destruction and the decline of past civilizations recalls work by Diamond (2005), Harper (2019) and others. Yet today's rate of ecological decline has no predecessor in history; it is being framed within the context of planetary boundaries exceeded and the Anthropocene taking root, characterized by the loss of nature and accelerating climate change.

[2] The IMF explains slowing rates of growth as a combination of domestic reforms, notably the tightening of banking regulations, and external uncertainty and volatility due to the rise of unilateral trade protectionism of the Trump Administration, which is having a dampening effect on global trade and investment. A recent report on financing sustainable development cautions of risks to the global economic system and the projected "peaking" of global economic growth in 2019 at around 3 per cent per year (United Nations, 2019).

Biodiversity: The IPBES released its assessment of the global state of biodiversity on 6 May 2019. The findings of that report are profoundly alarming and include the following conclusions from the *Summary for Policymakers* (IPBES, 2019):

- Current rates of ecological decline and destruction have never been witnessed before;
- An average of around 25 per cent of species in assessed animal and plant groups are threatened, suggesting that one million species already face extinction, many within decades;
- Between 1980 and 2000, some 100 million hectares of tropical forests have been lost, mainly from cattle production in South America and palm oil in Southeast Asia;
- Wetlands have declined by 87 per cent since the 1970s;
- Natural ecosystems have declined by 47 per cent on average, and biomass and species abundance has fallen by 88 per cent.
- Land degradation has reduced productivity in 23 per cent of the global terrestrial area, and as much as USD 577 billion in annual crop output is at risk because of pollinator loss;
- These rates of loss are not inevitable, but the time for new, urgent, transformative action is now.

The 2020 UN Convention on Biodiversity Conference of the Parties will be one opportunity for the international community to act. Many of the current Aichi Targets will not be met. Some new approaches under consideration by the scientific community include a new deal for nature, including proposals calling for 30 per cent of the planet be protected by 2030 and an additional 20 per cent of land be designated as climate-stabilization areas, including not only forest areas but also peatlands, tundra, mangroves, grasslands and wetlands as both important habitat areas and effective systems for carbon storage. Some leading proponents of the new deal for nature warn that the time for talking is over, that the current suite of targets have been inadequate and that humanity is facing a "point of no return" (Dinerstein et al., 2019).

Climate Change: The 2019 IPBES report notes that climate change is exacerbating the global biodiversity crisis, affecting species distribution, population dynamics, community structure and ecosystem function.

Since the CCICED's last Annual General Meeting in November 2018, climate records have been smashed in Australia, Argentina, Chile and elsewhere. In 2019, Mozambique was hit by unprecedented cyclones and flooding events. The World Meteorological Organization (WMO, 2019) reports that the average ocean-heat content is at record-high levels; that the average global temperature in 2018 tipped 1°C above pre-industrial levels; that the years 2015 to 2018 were the four hottest ever recorded; and that, in 2018, some 35 million people were affected by flooding and 125 million exposed to deadly heat waves.

Actions to counter GHG emissions is increasing. Markets for clean, low-carbon and zero-carbon energy are growing. Some 1,300 models of electric vehicles are now available in the United States. Annual climate finance reached USD 463 billion last year, with most focused on mitigation and far less on adaptation. More cities—including Atlanta, San Francisco and Chicago—are on track to be powered by 100 per cent renewable energy between 2030 and 2035. Wales has committed to making the public sector carbon neutral by 2030, with green procurement playing a central role in buildings, transport and other activities.

Despite these and a growing number of other initiatives, the world is not on track to meet the Paris Agreement. The International Energy Agency reported in early 2019 that global energy-related GHG emissions increased in 2018 by 1.7 per cent. Current levels of GHGs are at an all-time-high of 33.1

Gt CO_2 (IEA 2019).[3] It is no wonder a new generation of activists like Greta Thunberg are expressing impatience with promises and demanding action now.

4. Green Development, Prosperity and Quality Development

The current sense of urgency to act is why the second aspect of ecological civilization as a new means to achieve prosperity is so welcome. Decades of warnings from scientists about the state and fate of global ecosystems has led to change, but clearly not enough and not fast enough. Therefore, describing ecological civilization as a positive means to prosperity is so immensely welcome. Part of this prosperity agenda is to show that green development delivers, in traditional economic indicators, starting with jobs and income. In its most recent annual report, the International Labour Organization (ILO, 2018) notes that 1.2 billion jobs depend on a stable and healthy environment, noting that more jobs are being created in the shift to low-carbon, clean energy systems than jobs being lost as dependence on coal declines. Indeed, 24 million new jobs have been created in highly innovative emerging industries like electric vehicles, clean energy and green financial services, compared to 6 million jobs lost in carbon-intensive sectors (ILO, 2018). However, those gains are at risk from climate impacts that threaten domestic production and global supply chains, putting at risk 72 million full-time jobs in the next 11 years.

Beyond GDP: Quality Matters

The above estimate of the job effects of climate change point to a profoundly welcome reassessment of tradition economic indicators underway that takes into account ecological destruction. Certainly, no indicator has held more sway on economic planning than GDP. GDP has been a pillar of the 70-year Bretton Woods system, reflecting the Keynesian emphasis on the need to measure aggregate income and expenditure flows. Ancillary accounts have been developed to measure other indicators, such as savings and balance of payments, but ultimately GDP has focused on measuring income flows.

Complaints about GDP have been long-standing. In 1968, Robert Kennedy famously said that GDP "measures everything except…that which makes life worthwhile."[4] Over the years, many initiatives have been launched to complement GDP, including for instance the 1990 launch by UN Development of the annual *Index of Well-Being* report. More recently, the IMF, World Economic Forum and others have pointed to the limits of GDP. In late 2018, for instance, the OECD released the *Beyond GDP Report* with various recommendations to complement GDP as a means to reconnect the economy with people and nature.

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[3] A useful overview of China's comprehensive climate mitigation actions is the December 2018 edition of *Mapping China's Climate and Energy Policies*, published by the Swiss, German and U.K. embassies in Beijing.

[4] In that speech, Kennedy noted that "Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage…[It] does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile." More recently, a Nobel-prize economist argued that "GDP is not a good measure of economic performance, it's not a good measure of well-being" (Chainey, 2016).

The questioning of GDP gained urgency following the 2008 global financial crisis, as many wondered why seemingly healthy GDP indicators showing growth moments before the crash missed entirely the fragility of the system. The answer is simple enough: GDP was never intended to predict the future, but rather to measure the performance of the last quarter. More problematically, since GDP was designed to measure mostly income flows—that is, the quantity of economic activity—it has little insight into the structural quality of that economic activity, let alone whether levels of debt and deficit spending—be they financial or ecological—are sustainable.

One of the architects of GDP, Nobel-prize economist Samuel Kuznets, warned of the dangers in GDP gaining prominence beyond its founding purpose and of the risk in confusing quantity with quality. In the 1930s, Kuznets landed on a production-driven model as the basis of national income accounting and GDP. His reasoning was understandable: Kuznets focused on production flows in the midst of the Great Depression, when U.S. national income had shrunk from USD 89 billion in 1929 to USD 49 billion in 1932. Focusing then on quantity of manufacturing output and related income flows was understandable then, given the context of sharp economic decline. Yet three decades after writing the seminal paper that launched our love affair with GDP, Kuznets cautioned of the fundamental importance of distinguishing between "between the **quantity and quality of growth**, between its costs and returns, and between the short and long term"(Kuznets, 1962, emphasis added).

4. Natural Capital

China's articulation of an ecological civilization that emphasizes high-quality development is therefore of critical importance from both an economic theory and an applied policy perspective. China is a leading proponent of work to complement GDP, including work in ecological accounting, integrated wealth and comprehensive wealth measurement.

Much of this work draws upon the methods and framework championed by Cambridge economist Sir Partha Dasgupta. Of note is UN Environment's 2018 *Inclusive Wealth Report (IWR)*, in which Dasgupta chairs the science panel. It concludes that the world's economic growth has been largely fuelled by a kind of ecological deficit spending. The report demonstrates through the use of existing official national statistics that between 1990 and 2018, while GDP growth appeared positive, the natural capital shrank on average by 0.7 per cent per year. Put another way, one fifth of the planet's natural capital base has been lost in less than three decades, as the world economy is driven by rapid development (UN Environment, 2018).

Climate Smart Natural Infrastructure: Work in natural capital is undergoing a renaissance. This work is intended not only to describe unsustainable rates of loss, but to show new areas of action working with natural capital. For example, the Natural Capital Lab of the Inter-American Development Bank was created to bridge links between the environmental and financial sectors, with a focus on practical, scalable deals to accelerate projects that deliver sustainability solutions (IADB). In early 2019, Thomas Lovejoy emphasized practical links between biodiversity and climate action through the scaling-up nature-based climate solutions (Lovejoy and Hannah, 2019). Work by WRI and others has shown the key role of forests and forestry management in sequestering carbon, as well as the importance of REDD+, in that regard (Seymour et al., 2018). Work by Pattison-Williams et al, (2017) has also demonstrated the importance of maintaining or restoring wetlands as being more cost-effective in flood-control responses than traditional built infrastructure. The 2019 IPBES summary report notes the importance of nature-based solutions, including green and blue infrastructure.

The Natural Capital Project—a partnership between Stanford University, the Nature Conservancy, World Wildlife Fund and the University of Minnesota—is using natural capital information to

integrate ecosystem values into economic and societal decisions. Tools include large-scale spatial planning to identify rich areas of ecosystem importance as a means to improve the siting and design of megaprojects including infrastructure, as well as analytic data tools to record ecological values like sequestered carbon within standing forests (Natural Capital Project, Stanford University).[5]

6. Looking Ahead: Challenges and Opportunities

Given the pace of change, uncertainty and risk, it is hard to predict what issues China and the world will face as its 14th Five-Year Plan comes to an end in 2025. What is clear is that action to tackle the global climate and biodiversity crises must be well advanced then, in order to be on track for the 2030 timeline. China's leadership in high-quality development suggests that a new course of economic development can occur, one in which natural capital, social well-being and innovation-led development are values needed to realize the SDGs and ecological civilization. The following provides some issues to consider in these important steps ahead.

Governance, Policy Coherence and Institutional Coordination: A recurring theme of the 13th Five-Year Plan is the importance of effective and coordinated governance systems, to align action at state, provincial, city and rural levels. China has identified large-scale geographic regions—of note is the wider Yangtze River Basin—in order to align and coordinate policy actions across multiple levels of government jurisdiction.

Policy coherence is important. It is also immensely difficult. Among the lessons of the UN 2030 Agenda and the SDGs is the importance of integrated action across key sectors, policy instruments and communities. Unlike the environmental agenda's remit around pollution abatement and conservation, the SDGs have prompted several governments—Germany, Finland, France, Mexico and others—to coordinate all-of-government action across ministers and sectors, and to promote public participation from communities as a source of innovative, transformative ideas.

Gender Mainstreaming is a CCICED priority, and work continues within the Special Policy Studies to highlight this issue. While work has identified labour market gaps and comparable pay gaps, recent analysis has pointed to higher-than-expected economic gains associated with greater gender parity, from boosting the economy-wide benefits of more women in the workforce to gains in women on corporate boards: for example, banks with more women on their boards tend to have better capital buffers and fewer nonperforming loans (IMF, 2019a)

Green Development within Economic Sectors is increasingly related not only to downstream and end-of-pipe measures, but also to integrating innovation, efficiency and resilience planning upstream. The transition to clean energy systems is a priority in nearly all countries, and pathways after coal are gaining support, including among green consumers. Two additional sectors—both noted in the 13th Five-Year Plan, are agriculture and natural resources. Agriculture is or should be at the front lines of sustainability. A 2019 U.S. National Academies report underscores the strategic importance of making food systems more efficient, resilient and sustainable, and states that progress in light of climate and other challenges requires "radically different" approaches. In the metals, minerals and mining sector, London Metal Exchange announced in April 2019 that it would only trade in responsibly sourced metals by 2022. Since much of the Fourth Industrial Revolution and clean

[5] The next phase of the CCICED Special Policy Study on the Yangtze River Economic Belt will examine the role of natural capital in supporting comprehensive protection, in partnership with the Natural Capital Project.

energy sector relies on key metals (cobalt and lithium), initiatives like the World Bank's Climate Smart Mining are a welcome example of integrated sustainability management.

Greening Financial Instruments are well underway, from climate finance and green bonds to the uptake of market-based fiscal instruments like carbon pricing and emissions-trading systems. Two additional tools are green procurement and debt finance. Given that public procurement represents a large proportion of total economic activity in most countries (typically between 20 and 30 per cent), green procurement based on high-quality green standards can be a powerful driver to de-risk newer, low-carbon and clean goods and services. In the area of debt, President Xi noted the importance of debt sustainability. A positive example of how debt is linked with conservation is the 2015 partnership between The Nature Conservancy and the Seychelles, with other partners like the Global Environment Facility and UN Development, to use a new debt-for-conservation arrangement to protect and conserve the coastal marine area of the Seychelles. The Nature Conservancy is now working with others on a broader, 20-country initiative to leverage debt for conservation and biodiversity protection.

Building Climate Resilience: The Global Commission on Adaptation is taking stock of the current rate of climate adaptation efforts, as well as the urgent need to accelerate climate adaptation action in the face of more frequent and extreme climate impacts affecting all countries, communities, sectors and ecosystems. The commission is co-convened by the World Resources Institute and the Global Center on Adaptation, with six of its commissioners affiliated with CCICED, including Minister of Ecology and the Environment Li Ganjie. The commission will release its report during the September 2019 UN Climate Week in New York. Given the accelerating severity of climate impacts, CCICED may consider integrating its findings and recommendations into ongoing work and might consider new research moving forward.

Adopting High-Quality Green Standards: In his address to the Second Belt and Road Forum, President Xi referenced the importance of high standards as well as the role of green, high-quality infrastructure. High levels of environmental standards are important both at the domestic and BRI levels. One dimension involves safeguards: the World Bank, which updated its safeguards in 2016, has provided a useful mapping of safeguards across lending organizations. A second is aligning standards with multilateral environmental agreements, such as the Kigali Amendments to the Montreal Protocol and the need to phase out HFCs—a highly-potent GHG—as well as adopt best-in-class efficiency standards for new industrial and cooling systems.

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