



CCICED

SPECIAL POLICY STUDY REPORT

Post-2020 Global Biodiversity Conservation

2020

Policy Studies Release
September, 2020



Special Policy Study Members

Co-leads (surname alphabetic order)

International

Arthur HANSON Distinguished Fellow and Former President, International Institute for Sustainable Development (IISD) / CCICED Member

LI Lin WWF International

National

GAO Jixi Satellite Application Center, Ministry of Ecology and Environment, China

MA Keping Institute of Botany, Chinese Academy of Sciences/ Biodiversity Committee, Chinese Academy of Sciences

Advisory Experts (surname alphabetic order)

International

Beate JESSEL German Federal Agency for Nature Conservation

Hideki MINAMIKAWA Japan Environmental Sanitation Center (JESC)

Lennart KUEMPER-SCHLAKE German Federal Agency for Nature Conservation

Guido SCHMIDT-TRAUB Sustainable Development Solutions Network (SDSN)

Dominic WAUGHRAy World Economic Forum Centre for Public Goods

National

CHEN Jin Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences

HAN Qunli IRDR International Programme/Radi, Chinese Academy of Sciences

John MACKINNON Conservation Biologist

OUYANG Zhiyun Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences

PAN Jiahua Institute for Urban & Env. Studies (IUE/CASS)

XU Jing Chinese Research Academy of Environmental Sciences (CRAES)

XUE Dayuan College of Life and Environmental Sciences, Minzu University of



China

ZHANG Haiwen

China Institute for Marine Affairs (CIMA)

ZHU Chunquan

World Economic Forum

Drafting Experts**International**Marcel Theodorus
Johannes KOK

PBL, Netherlands Environmental Assessment Agency

Harvey LOCKE

WCPA Beyond the Aichi Targets Task Force

Eliane UBALIJORO

McGill University

National

Lv Zhi

Peking University

WEI Fuwen

Institute of Zoology, Chinese Academy of Sciences

YANG Rui

Tsinghua University

LIU Dong

Nanjing Institute of Environmental Sciences, MEE

WEI Wei

Institute of Botany, Chinese Academy of Sciences

LI Nan

WWF China

XU Mengjia

Nanjing Institute of Environmental Sciences, MEE

ZHANG Kun

Nanjing Institute of Environmental Sciences, MEE

Alice C. HUGHES

Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences

ZOU Changxin

Nanjing Institute of Environmental Sciences, Ministry of Ecology and Environment

SHEN Xiaoli

Institute of Botany, Chinese Academy of Sciences

QIAO Qing

Beijing Municipal Research Institute of Environmental Protection

WANG Binbin

Research Center for International Organization, Peking University

ZHENG Hua

Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences

WANG Wei

Chinese Research Academy of Environmental Sciences

FENG Chaoyang

Chinese Research Academy of Environmental Sciences, CRAES

LI Shuo

Greenpeace China



XIE Xi

World Economic Forum

Coordinators (surname alphabetic order)

LUO Maofang Institute of Botany, Chinese Academy of Sciences/ Biodiversity
(formerly Liu Yinan) Committee, Chinese Academy of Sciences

WU Qiong WWF China

*The co-leaders and members of this SPS serve in their personal capacities. The views and opinions expressed in this SPS report are those of the individual experts participating in the SPS Team and do not represent those of their organizations and CCICED.



Contents

Executive Summary	7
1. Leadership and Engagement: China's roles for CBD COP 15 success.....	9
1.1 Strong Political Will.....	10
1.2 Building Momentum	13
1.3 Evidence Supporting the Need for Stronger Biological Diversity Decision Making	13
1.4 Significant Events (June 2019 to 2021):.....	15
1.5 Implication of the COVID-19 Pandemic	16
2. Stocktaking on Parties' View Regarding Post 2020 Global Biodiversity Framework (GBF) and its Implementation	16
2.1 Proposed Changes to the CBD Open-Ended Working Group Zero Draft Document of January 2020	16
2.2 Potential Analysis for Protected Area Expansion for Parties of the Convention on Biological Diversity for 2021–2030.	19
3. China's Showcase Efforts for Ecological Conservation	20
3.1 Establishing Ecological Civilization System and Formulating Top-level Design of National Ecological Protection	21
3.2 Delimiting ECRs and Control of Important Ecological Space.....	23
3.3 Promoting Biodiversity Protection Through Ecological Poverty Alleviation.....	24
3.4 Establishing and Improving Eco-compensation Mechanisms	25
3.5 Promoting Ecological Civilization With the Construction of Demonstration Districts	26
4. Post-2020 Biosecurity/biosafety, Biodiversity and COVID-19 Working Paper.....	27
5. Recommendations	27
5.1 China's Global Leadership and Engagement.....	28
5.2 Recommendation for the Post-2020 Global Biodiversity Framework.....	28
5.3 Proposal for a Multilateral Nature-Based Solutions Fund Initiated by China to Be Put Forward at CBD COP 15 and UNFCCC COP 26	29
5.4 Recommendations on Improving and Popularizing China's Main Ecological Protection Practices and Experiences Sharing.....	31
5.5 While Addressing the COVID-19 Pandemic Emergency, and National and Global Economic Recovery, Ensure That Adequate Attention and Financial Support Is Given to	



Addressing the Eco-Environmental Emergencies Affecting Biodiversity and Climate Change	33
6. Recommendations on Ecological Conservation and Restoration for the 14th FYP for China's National Economic and Social Development	35
References	37
Annex 1. Momentum Built for Actions on Nature and People	39
The Sharm El-Sheikh to Kunming Action Agenda for Nature and People	39
The Nature Champions Summit, Montreal	39
High-Ambition Coalition for Nature	40
Trondheim Conference	40
Annex 2. Evidence for Decision Making	41
Food and Land Use Report. Ten Critical Transitions to transform Food and Land Use	41
The Global Risks Report 2020	42
New Nature Economy Report	42
Nature Is Too Big to Fail – Biodiversity: the next frontier in financial risk management	43
Economic and Financial Systems and Tools to Develop Biodiversity Conservation	44
Studies in the Making	44
Annex 3. Biodiversity and Pandemic Risk Reduction	46

Executive Summary

The CCICED Special Policy Study (SPS 1-2) on Post 2020 Global Biodiversity Conservation proposes following new recommendations, building on two rounds of earlier recommendations prepared for CCICED 2018 and 2019 Annual General Meetings (AGMs) regarding the Convention on Biological Diversity (CBD) COP 15 (now postponed from November 2020 until Q2 in 2021), and now also taking into account the volatile global context related to the COVID-19 pandemic.

- **Initiate a heads of state/government segment for the CBD COP 15.** China should consider organizing an opening session of the CBD COP 15 at the heads of state/government level in Beijing, as a follow-up to the September 2020 UNGA Summit on Biodiversity. This could be organized with a range of like-minded, progressive, and high-ambition heads of state/government, who together could provide the strongest political signal recognizing the connection of nature to human well-being and show a willingness to take urgently needed transformative actions to protect and enhance biodiversity.
- **Strengthen leadership and engagement.** China can play a stronger leadership role by actively engaging together with other countries at the UN heads of state/government Summit on Biodiversity to jointly send strong political signals at the highest level. It can also use green diplomacy, engaging with negotiators to bridge gaps and build agreements by making full use of the additional months due to COP 15's postponement. Well-organized international communication through virtual meetings is becoming the new normal for both information exchange and negotiation. This is a tremendous opportunity for COP 15 preparations.
- **Strive for an ambitious Post-2020 Global Biodiversity Framework (GBF).** With "Nature-Positive by 2030" as a Global Apex Goal, promote the role of Ecological Civilization within China and to interested parties outside of China, as noted in the COP 15 Theme. Also, recognize and promote the need to strengthen implementation of the UN 2030 Sustainable Development Goals (SDGs) to provide integrated initiatives for synergies involving biodiversity, climate change and various social concerns, including poverty elimination. Involve all parties and stakeholders in creating ambitious and implementable National Biodiversity Strategy and Action Plans (NBSAPs) and additional National Voluntary Commitments (NVCs). Use 2020 as a baseline to achieve nature and biodiversity positive by 2030. Recognize the "Three Conditions" differentiation (1. Farms and Cities, 2. Shared Landscapes, and 3. Large Wild Areas) in designing areas for conservation and sustainable use. Realign and greatly enhance public and private financial flows for reversing ecosystem degradation. Develop global strategies for international collaboration and technology transfer.
- **Propose a China-led multilateral and collaborative Global Biodiversity Fund to be put forward at COP 15.** Establish a China-led new international biodiversity conservation fund at COP 15 to facilitate the implementation of post-2020 GBF. An initial scale of at least USD 10 billion can be followed by annual refreshment contributed by CBD parties, public and private sectors as well as global finance entities. The suggested Global Biodiversity Fund can focus on supporting conservation and sustainable use efforts in developing countries. It should have an effective management mechanism to enhance its efficiency as well as to help mobilize and integrate other financial resources. Also, China and others could allocate portions of COVID-19 recovery/stimulus packages to biodiversity needs and nature-related disease prevention.
- **Ensure adequate and continued financial support to addressing the eco-environmental emergencies affecting biodiversity and climate change.** This should be kept in mind during the restructuring of national and global economic recoveries related to COVID-19, to prevent a larger scale set of disasters caused by longer-term issues such as climate change, biodiversity loss, and ecosystem degradation.



- **Enhance domestic ecological conservation practices, especially Ecological Conservation Redlining (ECR), during China’s upcoming 14th Five Year Plan (FYP) (2021–2025).** Integrate ECR as one of the “nature-based solutions” for synergies between climate change adaptation and biodiversity enhancement. Include carbon sinks as an ecological function for delimiting ECRs. Strengthen China’s habitat integrity and connectivity through ecological restoration, and actively promote that approach on the global stage. Use the period leading up to the CBD COP 15 (and the meeting itself) to build a better international understanding of Chinese achievements on green development, biodiversity conservation, and ecological protection. Also, outline the mechanisms to overcome challenges and innovations to address important socioeconomic and other opportunities.
- **Increase international cooperation on ways to use knowledge and experience from China’s ecological protection practices, as a means to further the CBD’s post-2020 objectives.** Green the Belt and Road Initiative (BRI) by applying ECR and other Chinese innovations in BRI partner countries. Work cooperatively to reduce global eco-risks.
- **Significantly reduce the level of environmental and ecological risks that can lead to human, plant or animal disease outbreaks, epidemics, or pandemics during the 14th FYP period.** Modify wildlife conservation laws to improve the capability of biosafety systems for prevention and control of outbreaks, epidemics, and pandemics. Strengthen China’s commitment to building ecological resilience as a medium- and long-term transformative approach toward national, regional, and global biosecurity. Establish and lock in new baseline or reference levels of pollution considering air, water, and other forms of pollution (such as plastics) reduction during the 2020 COVID pandemic. Ensure economic stimulus and economic recovery packages do no harm to biodiversity and ecosystems; substantively support green development and protection of nature; maintain and strengthen environmental laws and regulations during the efforts to address the impacts of COVID-19.

1. Leadership and Engagement: China's roles for CBD COP 15 success

Since the end of 2019, COVID-19 has become a pandemic, attacking well over 200 countries and territories. Deadly viruses are a biological disaster that human beings have fought throughout history. The unfolding pandemic highlights how vulnerable we still are to nature. Furthermore, major disease outbreaks—such as the 1918 flu pandemic, 2002–2004 SARS, 2009 H1N1 flu pandemic, and 2014–2016 Ebola—were all zoonotic viruses. There is a human hand in pandemic emergences. A single species—humans—has exacerbated pressure to ecosystems, which are the foundation of our survival, through rampant deforestation, uncontrolled expansion of agriculture, intensive farming, mining, and infrastructure development, along with the exploitation of wild species. Our relationship with nature has been distorted. Amazonian fires are largely due to encroaching human activities; the fires in Australia have wiped out homes, vegetation, and countless wildlife; record-breaking temperatures are being recorded in the Antarctic and Arctic; locust swarms ravage Africa and Asia; and on a huge scale, the Great Barrier coral reef is bleaching. These are cries from nature—and warnings to humans.

While these highly destructive events may appear to be one-time or episodic events, careful examination shows they are part of global patterns with serious immediate and long-term impacts. There are also structured and systemic changes in our disturbance of planet Earth, mostly unseen and even more threatening to our existence: climate change, accelerating biodiversity loss, and the ecological impacts of production and consumption (plastic waste being a critical one). The average number of native species in most major land-based habitats has fallen by at least 20%, mostly since 1900. More than 40% of amphibian species, almost 33% of reef-forming corals, and more than a third of all marine mammals are threatened.

Human actions have altered more than three quarters of the Earth's land surface, destroyed more than 85% of wetlands, and converted more than a third of all land and almost 75% of available freshwater to crops and livestock production. Unregulated trade in wild animals and the explosive growth of global air travel have spread deadly diseases, brought untold human suffering, and halted economies and societies around the world.¹ Nature has given us a signal that it is time to rethink and realign our behaviour and economy with nature. At the right time, and with attention paid to the current emergency, there is an opportunity to highlight that our health, food, climate, and nature are all connected.

We need to pay close attention to all of these systematic transformations even when we are fighting an immediate pandemic crisis. We need to take serious steps now to reduce environmental risks and improve ecological, economic, and social resilience levels locally, nationally, and globally for the decades ahead. The jolt from COVID-19 reminds us that the complex 2030 Sustainable Development Goals (UN 2030 SDGs) must be achieved in a time frame of less than a decade. An ecological civilization in China is to be achieved during the next three FYPs. Full restoration of global biodiversity by 2050 is a long-standing aspiration. Holding global temperature rise to 1.5 or 2.0°C and achieving zero-carbon society are essential. These and other pressing needs, especially poverty elimination, provide the backdrop to the CBD COP 15 meeting to be hosted by China and rescheduled from October 2020 in Kunming to a date to be determined in 2021. This meeting will set the direction of global biodiversity efforts to 2030, with implications for action to mid-century.

The world that we know today might enter a new era—almost beyond our current recognition as recovery from the COVID-19 pandemic plays out, possibly over a period of five to years or more. Even with its unfortunate start, 2020 remains a critical year when we can continue the process of rethinking and realigning our relationship with nature. Strong political will, determination, and actions will be needed. With China's efforts to control the COVID-19 outbreak, multilateralism facing challenges (but international cooperation needed as never before to address planetary emergencies), and the key

¹ IPBES Expert Guest Article by Professors Josef Settele, Sandra Díaz, Eduardo Brondizio, and Dr. Peter Daszak. <https://ipbes.net/covid19stimulus>



decision making moments on multilateralism (UNGA75), nature (CBD) and climate change (UNFCCC) approaching, China can play a stronger leadership role in year 2020 and beyond to collectively secure a safe future—nature-positive and carbon-neutral—for current generations as well as those to come.

1.1 Strong Political Will

Recently, the world has seen significant momentum built around and toward elevating a nature agenda among state and non-state actors. Strong visible political will and support are critical to galvanizing the momentum to catalyze actions needed to reverse the loss of nature by 2030.

UN Secretary-General António Guterres has laid out the need for action in the year 2020, including action at the highest level. On February 12, 2020, he observed that

biodiversity offers solutions for many global challenges. From climate change to food and water security, from decent jobs to gender equity, healthy ecosystems are critical. The time has come to put nature at the heart of sustainable development and to invest in restoring the earth's nature support ecosystems. This year brings many opportunities: the biodiversity summit in New York, the biodiversity conference in Kunming, as well as the COP26 on climate change in Glasgow.

Guterres calls on “all leaders to show ambition and urgency as we strive to reverse biodiversity loss, conserve and sustainable use natural resources, and share the benefits fairly.”

Political leadership can take different shapes and forms.

Heads of State (HoS) Biodiversity Summit

When facing multiple global emergencies as we now do, strong political signals from the highest levels on the global stage and within a state/government is urgently needed. Thus, 2020 offers a unique opportunity to act using an integrated approach for health, climate change, nature, and development agendas. The critical HoS Summit at the margin of UNGA75² will be a key moment to send a strong collective political signal to the world in the form of emergency declarations, or calls to commitment, or calls to action, or voluntary leaders' declarations, for nature and people. There are other moments when enlightened HoS can give their political signals. At the global level, these include the November 2020 G20 Riyadh summit, and the HoS moment during the International Union for Conservation of Nature (IUCN) World Conservation Congress “One Planet Summit” (now postponed to January 2021) in France. There are regional moments that can be stepping stones: the ASEAN Conference for Biodiversity, EU–China Summit, etc., which are postponed, with new dates to be decided. The G20 virtual dialogue on March 26, 2020, although focused on the emergency matters of COVID-19, also showed signs that global leaders can rethink and realign our relationship with nature. In this critical historical time, China can play a role in reshaping a robust process that does justice to new realities and new priorities.

Heads of state and government can declare a planetary emergency, or a call to action, that gives strong political commitment, decisions, and urgent actions to build a nature-positive future for all life on Earth. This is needed even more now for **halting and reversing biodiversity loss and putting nature on a path to recovery for the benefit and health of all people and the planet by 2030**. The HoS, based on scientific research, can issue calls to:

- Build a stable climate and diverse nature future as the foundation needed to meet SDGs through whole-of-government and whole-of-society actions;
- Put nature restoration, climate stabilization, and achieving UN2030 SDGs as the foundation for a whole-of-government priority and whole-of-society set of actions;
- Secure an ambitious and transformative post-2020 Global Biodiversity Framework (GBF) and ensure its immediate implementation once adopted;

² Summit on Biodiversity 22-23 September 2020 on margins of the UNGA 75th Session. Heads of State and Government. Theme: *Urgent Action on Biodiversity for Sustainable Development*.

- Address direct and indirect drivers of nature/biodiversity loss and climate change on land and in the ocean;
- Mainstream nature (biodiversity and ecosystem services) into all relevant economic sectors to significantly reduce the negative footprint of production and consumption;
- Secure and fairly share the benefits derived from conservation and sustainable use of nature;
- Implement economic and financial reform to realign and increase financial resources to address the double challenges that we are facing: nature/biodiversity loss and climate change;
- Ensure that the economic recovery and stimulus measures post-COVID-19 will: (1) promote delivery of SDGs (health benefits to people, job creation, and poverty alleviation, etc.), (2) do no harm to ecological systems and climate change, and (3) promote green transition to a carbon-neutral, nature-positive, and healthy-people future;
- Build actions that reverse nature loss by 2030 and align our national strategies and action plans on climate, nature, and sustainable development commensurate with the challenges we face;
- Work with business, investors, academics, civil societies, women, youth, Indigenous peoples and local communities (IPLCs), cities and other sub-state and non-state actors to join forces to reverse the loss of nature and biodiversity; and
- Enhance policy coherence and synergies across all relevant environmental conventions.

China's leaders should work in coordination with other heads of state, the CBD Secretariat, and other key stakeholders to propose approaches and initiatives to engage biodiversity issues at the highest level. Utilizing and creating opportunities so that UN Secretary-General, heads of state, business front-runners, and key opinion leaders will show their determination and collective efforts to jointly fight this global crisis multilaterally. Specifically, the world leaders should:

1. **Put nature high on the political agenda** and recognize the fundamental relationship between nature, a stable climate, human well-being, and sustainable development for all:
 - Make public statements of commitment for a nature-positive and carbon-neutral sustainable development, including aligning the post-COVID-19 economy recovery plan with biodiversity and climate goals;
 - Discuss proposed CBD COP 15 targets in government sessions and provide feedback;
 - Advocate in international forums for the targets.
2. **Seek an emergency declaration to call for ambition, commitment, and action** to reverse the loss of nature by 2030 in order to create a sense of urgency at the highest political levels, and increase the pressure for both short- and longer-term action and impacts.
 - Support and participate in a Summit on Biodiversity at or around UNGA75 or before CBD COP 15 with a strong Emergency Declaration outcome;
 - Ensure the emergency declaration incorporates strong language on elements of the “New Deal for Nature and People”³ and sets the ambition at the right level, with targets and time-bound commitments.
3. **Advocate and set ambitious targets for *Nature-Positive by 2030*** for the benefit of people and the planet. Specifically:
 - Take action and be the first to commit to the targets;
 - At COP 15, advocate for the targets to be part of the CBD post-2020 framework;
 - Communicate the commitment to the targets on social media, intergovernmental, and other channels.
4. **Adopt and enforce effective implementation and accountability mechanisms** for biodiversity. Specifically:

³<https://medium.com/@WWF/the-world-needs-an-ambitious-new-deal-for-nature-people-9a290d0e244a>;

- Increase investments, including within post-COVID-19 recovery plans for a green and just recovery, for nature conservation that protects global and other critical biologically diverse areas, key biodiversity components, and areas likely to host unique aggregations of biodiversity;
- Start formulating the National Voluntary Commitments (NVCs) and update NBSAPs;
- Introduce a ratchet mechanism that includes regular stocktaking to track action progress in order to allow periodic uplift of ambition and implementation;
- Provide an enabling environment so that businesses, investors, academics, civil societies, women, youth, IPLCs, cities, and other sub-state and non-state actors can take action.

Emerging Leaders

Actions to elevate the nature agenda at various levels have been emerging—and to some extent surging.

China's President Xi Jinping and French President Macron have made strong commitments to reverse the loss of biodiversity in their Beijing Call⁴ for Biodiversity Conservation and Climate Change (November 6, 2019). China and France are jointly committed to addressing the threats and drivers of loss of nature for global peace and stability of food security, human health, and SDGs.

The two presidents committed to “working together on the link between climate change and biodiversity, and determined to support and work together with other political leaders to prompt a global and effective response to climate change and biodiversity loss in the COP 15 of CBD.”

They “call on all countries and, when relevant, subnational authorities, companies, NGOs and citizens to: Encourage concrete and ascertainable commitments and contributions to biodiversity conservation from actors and stakeholders across all sectors to stimulate and support government action in the promotion of a robust post-2020 global biodiversity framework in the frame of the Sharm El-Sheikh to Kunming Action Agenda for Nature and People;”

They determined to “promote active engagement of political leaders at the highest level in advocacy for biodiversity at CBD COP 15 with the theme: Ecological Civilization-Building a Shared Future for All Life on Earth.”

They committed to work together to “Capitalize on the Nature-Based Solutions Coalition co-led by China and leverage nature-based solutions to coherently address biodiversity loss, mitigation and adaptation to climate change, and land and ecosystems degradation.”

They called to “Mobilize additional resources from all sources, both public and private, at the domestic and at the international level, toward both climate adaptation and mitigation; make finance flows consistent with pathways toward low greenhouse emissions and climate-resilient development, as well as for the conservation and sustainable use of biodiversity, the conservation of oceans, land degradation amongst others; ensure that international financing, particularly in the infrastructure field, is compatible with the Sustainable Development Goals (SDGs) and the Paris Climate Agreement.”

Other groups of countries are taking actions in various timeframes and levels. A summary describing some of these coalitions can be found in Annex 1.

Clusters of countries such as these are increasingly demonstrating their willingness and leadership to conserve nature. The trend is getting stronger, and changes are happening quickly. These leaders are increasingly calling for actions to address nature loss. About 50 national governments—and the numbers are growing—have called or signed on to call to actions through Montreal Nature Champions' Summit, G7's Metz Biodiversity Charter and corresponding International Leaders initiatives, Trondheim Conference, and the Leader's for Nature and People event during the UNGA⁷⁴ high-level week:

- Africa (12) – Burkina Faso, Cameroon, CAR, Egypt, Gabon, Kenya, Niger, Rwanda, Senegal, Seychelles, South Africa, Uganda

⁴<https://www.diplomatie.gouv.fr/en/french-foreign-policy/climate-and-environment/news/article/beijing-call-for-biodiversity-conservation-and-climate-change-06-nov-19>

- Asia Pacific (12) –Australia, Bhutan, China, Fiji, India, Indonesia, Japan, New Zealand, Palau, UAE, Vanuatu, Vietnam
- Europe (13 + EU) – Austria, Belgium, EU, Finland, France, Germany, Italy, Monaco, Netherlands, Norway, Portugal, Serbia, Spain, UK
- North America (2) – Canada, United States (*Metz Charter*)
- Latin America and the Caribbean (11) – Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Granada, Guyana, Mexico, Peru

These leaders, depending on the issues that they care about the most, are calling for urgent action to address the planetary emergency. It is a great opportunity for China, as CBD COP 15 host country, to join forces with them and to play a leadership role. It is timely that China joins in at least some of the movements, garners the momentum and energy, and shows the type of leadership to fulfill China's commitment made together with France.

With the immediate and long-term impacts of COVID-19, the priorities of these leaders may be adjusted. Our team will continuously monitor the progress and provide timely updates and analysis.

1.2 Building Momentum

More and more countries, institutions, and non-state and subnational actors are calling for, or taking, actions to elevate the nature agenda, taking a “whole-of-society approach” as noted below:

- **The Sharm El-Sheikh to Kunming Action Agenda for Nature and People:** Launched by China, Egypt, and the secretariat of the CBD. So far, only a few commitments have been registered, and many of them existed before COP 14. Here, political and practical support from China is important. One important step is to make the Action Agenda an integral part of the post-2020 GBF, as this will provide some clarity about the long-term direction for stronger non-state involvement in the CBD. A clear signal from China about this encouraging non-state actors to participate and contribute would be helpful.
- **The Nature Champions Summit, Montreal:** Where ministers from government gathered with CEOs from business and NGOs in Montreal in April 2019 and began a global mobilization committing jointly to take a different, better path that puts nature first, recognizing that it sets the context for all life—including human life—and accordingly requires our full respect and care in return. Collaboratively, these Nature Champions commit to placing nature's needs at the heart of all global agendas
- **Trondheim Conference:** The ninth Trondheim Conference on Biodiversity was held in Trondheim, Norway, in July 2019, created opportunities for increasing the understanding amongst stakeholders about issues on the biodiversity agenda.
- **High-Ambition Coalition for Nature:** An intergovernmental group championing a global deal for nature and people that can halt the accelerating loss of species and protect vital ecosystems (e.g., 30x30 movement to protect 30% of the earth by 2030) that are the source of our economic security. Two co-chairs, France and Costa Rica, planned to formally launch it at the IUCN WCC.⁵
- **“United for #Biodiversity” Coalition:** Made up of zoos, aquariums, botanical gardens, national parks, and natural history and science museums from around the world, launched on World Wildlife Day in 2020 by the European Commission.

1.3 Evidence Supporting the Need for Stronger Biological Diversity Decision Making

Efforts to gather evidence for decision making are growing, focusing especially on the role of nature from an economic point of view.⁶

⁵ With the changing date of the IUCN, there is a discussion that the launch will be at the UNGA 75.

⁶ See for example: OECD, 2019. *Biodiversity: Finance and the Economic and Business Case for Action*. (prepared for G7 Presidency and Environment Minister's Meeting, May 2019; United Kingdom, April 2020. *The Dasgupta Review – Independent Review on the Economics of Biodiversity Interim Report*. The Economist World Ocean Initiative, June 2020. *A Sustainable Ocean Economy in 2030: Opportunities and Challenges*. The

Recent assessments presented in the Global Assessment Report on Biodiversity and Ecosystem Services, released in May 2019 by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)⁷, have estimated that extinction rates are estimated to be 1,000 times the background rate, and that 75% of the Earth's land surface is significantly altered, 66% of the ocean area is experiencing increasing cumulative impacts, and over 85% of wetlands have been lost.

In addition, more and more studies focus on the enhancement of natural capital, evidence for action from new perspectives and synergies, and developing improved mechanisms for implementable changes. Some have been released after the CCICED AGM 2019, and some are to be released in the coming months. Here is a non-exhaustive list:

- **Food and Land Use Report. 10 Critical Transitions to Transform Food and Land Use**
Launched in October, 2019, the [Food and Land Use Coalition \(FOLU\)](#) report is the first to assess the benefits of transforming global food and land-use systems as well as costs of inaction. The report reveals benefits that far outweigh the costs: it also proposes actionable solutions. It is estimated USD 12 trillion a year in hidden costs relate to how we produce and consume food and use land currently. The benefits stand to unlock USD 4.5 trillion in new business opportunities each year by 2030, at the same time saving USD 5.7 trillion a year in damage to people and the planet by 2030, more than 15 times the investment cost of up to USD 350 billion a year. See also the 2019 FAO report on the *State of the World's Biodiversity for Food and Agriculture*.
- **The Global Risks Report 2020:** Launched by the World Economic Forum (WEF) in January 2020, shows that for the first time in 10 years, **the top five global risks in terms of likelihood are all environmental**. The report points to a need for policy-makers to match targets for protecting the Earth with ones for boosting economies – and for companies to avoid the risks of potentially disastrous future losses by adjusting to science-based targets.
- **WEF's "New Nature Economy Report Series's"** first report *Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy* was launched in January 2020. This report highlights "that \$44 trillion of economic value generation – more than half of the world's total GDP – is moderately or highly dependent on nature and its services and is therefore exposed to nature loss."
- **WWF's The Nature of Risk: A Framework for Understanding Nature-related Risk to Business** was launched in September 2019, intended to give a clear understanding of risks related to nature and climate change.
- **Nature Is Too Big to Fail – Biodiversity: the Next Frontier in Financial Risk Management**, jointly launched by PwC Switzerland and WWF Switzerland in January 2020, calls for at least USD half a trillion per year to cover funding gaps for biodiversity conservation and restoration.
- **Economic and financial systems and tools to develop biodiversity conservation**, jointly published by WWF France AXA in May 2019, identifies best practices and the most promising technical and political perspectives and also proposes a roadmap to develop biodiversity finance commensurate with the current biodiversity crisis.
- **Biodiversity – Opportunities and risks for the financial sector**, a report prepared by the cooperation of a few Dutch banks (Rabobank, ACTIAM, ASN, FMO, Robeco etc.) as part of the Dutch Sustainable Finance Platform. The report outlines what risks and opportunities exist for financial institutions around biodiversity. It estimates that the long-term economic damages of greenhouse gas emissions, based on 2008 figures, would be around USD 1.7 trillion per year. Those from biodiversity loss are estimated to range between USD 2–USD 4.5 trillion per year. This comparison provides a clear message that both phenomena are equally urgent, also for financial institutions, and require immediate action. It calls financial sector to play an important role to realize these opportunities and halt the global loss of biodiversity. It highlights a few case studies from Netherlands banks showing that people, planet, and profit can work in tandem and

Netherlands Bank (DNB) June 2020. *Indebted to Nature – Exploring Biodiversity Risks for the Dutch Financial Sector*.

⁷ <https://ipbes.net/global-assessment>

create positive biodiversity outcomes. These can be used when engaging in CBD negotiation processes.⁸

The number of emerging studies on the links between climate change adaptation and mitigation, biodiversity, and land is increasing rapidly, including those noted below.

IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems.

The Ocean and Cryosphere in a Changing Climate, September 2019

GBO5 draft (now at the review

stage)(<https://www.cbd.int/doc/c/bba0/d84c/e02639e37191f353553e513d/sbstta-23-02-add3-en.pdf>)

Local Biodiversity Outlook - LBO2 (<https://beta.localbiodiversityoutlooks.net>)

IPCC AR6 Climate Change 2021: Impacts, Adaptation and Vulnerability – Draft under review

IPCC AR6 Climate Change 2021: Mitigation of Climate Change (July 2021 – Draft under open peer review until March 2020)

FAO Commission on Genetic Resources for Food and Agriculture. 2019. *The State of the World's Biodiversity for Food And Agriculture*. FAO, Rome.

There are still more studies to be released relatively soon, looking at the relationship between humanity and nature from both nature and economic perspectives. An important example is the UK Government Review of the Economics of Biodiversity under the leadership of Professor Sir Partha Dasgupta.

1.4 Significant Events (June 2019 to 2021):

Since the time of CCICED's last AGM in June 2019, there have been several milestone events:

- Trondheim Meeting in July 2019:
- Davos in January 2020

There are still key events in the coming months that China can utilize for its nature-related diplomacy:

- ASEAN Conference on Biodiversity 2020 and Mega Diverse countries in Kuala Lumpur, Malaysia⁹
- IUCN WCC in Marseille, France¹⁰
- HoS Summit on Biodiversity in New York City, September 22–23, 2020¹¹
- China–EU 22nd Summit in Leipzig, Germany¹²
- CBD COP 15 in Kunming¹³
- UNFCCC COP 26, Glasgow¹⁴
- G20 summit in Riyadh, Nov. 2020
- UNEA 5, Feb. 2021

These are the moments when China's green diplomacy and high-level political engagement can demonstrate its impacts. The eyes of the world will be on Kunming, China, hoping that an ambitious

⁸ <https://www.dnb.nl/en/news/news-and-archive/dnbulletin-2020/dnb389169.jsp>

⁹ Postponed from March 2020 to unknown date, due to COVID-19 pandemic.

¹⁰ Postponed from June 2020 to January 7–15, 2021, due to COVID-19 pandemic.

¹¹ Format will be virtual. The final dates will be decided at the end of June

¹² Videoconference Meeting held on June 22, 2020 with some discussion on SDGs and on climate change, and the need for green and inclusive recovery from COVID-19.

¹³ Postponed from Oct. 2020 to Q2 2021.

¹⁴ Postponed from Nov. 2020 to Nov. 1–12, 2021.

and implementable post-2020 GBF can be agreed upon. China's leadership is greatly expected and needed.

These are also the moments when China can engage with key countries in the world to discuss issues related to nature conservation, combating climate change even while fighting COVID-19 and building a nature-friendly economic recovery. Relevant issues include greening the BRI, deforestation-free supply chains, sustainable use and governance of ocean ecosystems (including combating marine plastic litter), as well as biodiversity conservation and health. A focus on nature-based solutions (NBSs) might deliver more than one third of climate solutions. Integrating both GBF and the Paris Agreement, as well as the United Nations Convention to Combat Desertification's (UNCCD's) land degradation neutrality plan, into a country's Nationally Determined Contributions (NDCs) and NBSAPs can help China and the world move toward the UN Decade of Restoration and the direction of reversing the loss of nature by 2030. Overall, there is an important opportunity to achieve the UN SDGs and help China reach its 2035 ecological civilization goal. These are all aspects of the potential benefit of building the "Community of Human Destiny."

In light of the postponement of many biodiversity-related events this year, China should consider a high-level follow-up to the UNGA75 Biodiversity Summit. This could take the form of an Opening Session in Beijing for COP 15 for heads of state/government level. An additional approach might be to invite HoS from like-minded, progressive, and high-ambition countries to have an HoS/government session in Beijing, prior to the CBD COP 15 in Kunming, in order to build the strongest political signal to recognize the role of nature to human well-being and to show a willingness to take urgently needed transformative actions for nature, climate, land use, and sustainable development.

1.5 Implication of the COVID-19 Pandemic

The outbreak of COVID-19 is having a profound impact on China's diplomacy and political engagement. The OEWG 2 Committee was originally scheduled to be held in Kunming on Feb. 24–29, 2020, for negotiation of a "Zero Draft of the Post-2020 GBF" but was relocated on short notice to Rome due to COVID-19. This restricted attendance, including attendance of Chinese participants and many others. It reduced the opportunity to build momentum and opportunity for important dialogue. With almost all planned events in the first half of 2020 postponed or cancelled, China needs to turn crisis into opportunities by elevating the efforts of green diplomacy. China should significantly increase, mostly virtually, the communications and dialogues with "promoter," "swing," and "blocker" countries to understand their concerns and aspirations, to share China's views, and to gain consensus and convergence toward an ambitious post-2020 GBF and a path to build on the COP 15 Theme: *Ecological Civilization: Building a Shared Future for All Life on Earth*. The postponement due to the Covid-19 outbreak actually provides China some needed time for intensive diplomatic mediation prior to COP 15.

2. Stocktaking on Parties' View Regarding Post 2020 Global Biodiversity Framework (GBF) and its Implementation

2.1 Proposed Changes to the CBD Open-Ended Working Group Zero Draft Document of January 2020

Regarding the zero draft of post-2020 GBF (CBD, 2020a), we pay special attention to several key issues as follows:

- Global Apex Goal and 2030 Mission should be more ambitious such as bending the curve of biodiversity loss in 2030;
- The theme of COP 15 Ecological Civilization—Building a shared future for all life on earth should be incorporated into the GBF;
- Zero loss of natural habitat should be promoted;
- Sustainable production and consumption, and green supply chains for a transformational change should be promoted;
- Culture diversity and nature diversity should be closely linked;

We also propose the following improvements/revisions:

Background Part of the Zero Draft

(1) In past discussions, many interested groups, including parties and non-parties and other stakeholders, agreed to set up Specific, Measurable, Achievable, Realistic, and Timely (SMART) goals in the post-2020 GBF (CBD, 2019). This is not reflected fully in the text. We support the need to emphasize a SMART approach that targets/goals should have measurable and communicable targets which will benefit the conservation action plan and the monitoring and assessment of conservation. This is especially useful for protected area targets.

Introduction of Annex 1 of the Draft Framework Document

A. Background

(2) To reflect the theme of COP 15 in the post-2020 global biodiversity framework (GBF), we propose revising the last sentence of the paragraph by adding “*to realize Ecological Civilization – Building a Shared Future for All Life on Earth*” in the sentence and then connect to the original text. The term “a shared future for all life” is consistent with the 2050 vision of “Living in Harmony with Nature” but with social and political sense for governance to ensure the fulfillment.

The full sentence could be improved to read as below:

“The post-2020 global biodiversity framework builds on the Strategic Plan for Biodiversity 2011–2020 and sets out an ambitious plan to implement broad-based action to bring about a transformation in society’s relationship with biodiversity, *to realize Ecological Civilization – Building a Shared Future for All Life on Earth*, and to ensure that, by 2050, the shared vision of Living in Harmony with Nature is fulfilled.”

B. Theory of Change

(3) We support emphasis on transformational change, which should be centered within the scope of the post-2020 GBF. “Ecological Civilization” would be a good example that specifies conservation strategies and action plans to implement the GBF. The term “ecological civilization” integrates political, social, and economic elements together and is incorporated into relevant laws/regulations/strategies/action plans for biodiversity conservation in China. Although this term has been mainly promoted by China so far, the concept of this term highlights global concerns, emphasizes the role of transformational changes within the scope of GBF, and calls for transboundary cooperation in biodiversity conservation.

In addition, we shall have to make profound changes to reduce/eliminate the direct/indirect drivers of biodiversity loss (such as the threats coming from unsustainable production and consumption) in the transformational changes.

II. Framework of Annex 1

A. 2050 Vision

(4) In order to achieve ecological civilization—Building a shared future of all life on earth, to assist for the stability of the planet’s life support system, and to set up a global compass to halt and reverse climate change and biodiversity loss, we propose the development of a motivational, communicable, science-based, and measurable Global Apex Goal for nature action agenda.

The three elements of the Global Apex Goal will be added as a new paragraph:

A Global Apex Goal will be developed to align with the 2050 Vision which calls for living in harmony with nature: 1) The baseline of 2020 (recommended) will serve as a reference for zero net loss of nature and biodiversity; 2) By 2030, biodiversity and nature are recovering at a global scale; 3) By 2050 nature and biodiversity will be fully recovered and restored. At this point, we will have achieved

sufficient functioning ecosystems to support future generations of people and help avoid dangerous climate change.

B. 2030 and 2050 Goals of the Framework part 10(a) of the framework

(5) Regarding no net loss of ecosystems, we support limiting the use of offset concepts where utilization/loss of ecosystems in one place is compensated by reducing losses elsewhere. We propose to have measures that would ensure high-quality ecosystems are being protected, and to restore degraded or damaged ecosystems. Low-diversity ecosystems should be used instead to meet targets of no net loss of protection area without sacrificing high-quality ecosystems. This goal can be met by trying new approaches such as setting a baseline using the “Three Global Conditions” approach (Locke et al., 2019), i.e., to set up different goals adapting to various habitat situations: 1) Farms and Cities, 2) Shared Landscapes and 3) Large Wild Areas.

B 10 (d) and other places

(6) The global population is currently 7.6 billion, reaching 8.6 billion by 2030, and 9.8 billion by 2050 (OECD, 2019). In addition, most people are living in developing countries, such as Brazil, China, and India. Therefore, the number of people needing improvements in living standards should be counted in “billions” rather than “millions.” This will make the number simple to understand and the goal more communicable to the public.

C. 2030 mission

(7) We support an ambitious mission for the 10 years post-2020. We propose that it shall be to halt the loss of biodiversity and to reverse the curve of loss.

12. (a) 2.

(8) The goal for protected areas should be defined at global and national levels and national goals depending on the nature-related potential of parties. We may have a global conservation area target, but for the target at national level, different conditions shall be taken into consideration. We suggest countries consider common but differentiated responsibilities and associated implementation mechanisms should be developed, such as the Three Conditions approach¹⁵(Locke et al., 2019) emphasizing the uneven distribution of land-use drivers and human pressure, and suggest different conservation strategies be taken for the conservation of the three conditions. This will need to be based on scientific research.

D. 12 (b) 7.

(9) Regarding the recent outbreak of the novel coronavirus pneumonia, we need to take human health into consideration for the use, captive breeding, trade and consumption of wildlife. Therefore, we propose to add a sentence at the end of D(12)(b)7:

“to reduce/avoid the risk of disease transmission from animals to humans during the use and consumption of wildlife, to maintain healthy habitats and to develop systems to ensure wildlife trade and consumption are sustainable and well monitored.”

D. 12 (c) 17.

(10) Sustainable production and consumption related to transformational change should be well emphasized in the text.

¹⁵ “Three Global Conditions for Biodiversity Conservation and Sustainable Use (3Cs) is an implementation framework suitable for use in the post 2020 [Strategic Plan for Biodiversity Conservation”. The framework establishes the baseline state of three broad terrestrial conditions: (C1) Cities and farms (18% of global land), (C2) Shared lands (56%), and (C3) Large wild areas (26%). Antarctica is not included.

E. Implementation-support mechanisms

(11) The current action targets and measures are not sufficient to ensure complete transformational changes to halt and reverse biodiversity loss. Thus, we need to establish a mechanism for immediate action to ensure that transformational changes are within the scope of the GBF. In addition, taking into consideration that any potential biodiversity funding mechanism that will be set up to support the implementation of the GBF, we propose to add one point:

“To establish mechanisms, including a financial mechanism, to ensure the parties to take immediate policy actions globally, regionally and nationally to transform economic, social and financial models to realize conservation goals and to halt biodiversity loss.”

The proposal for a financial mechanism is provided in Part 5.3.

In response to the discussion during the Open-Ended Working Group second meeting in Rome, Italy during February 24–29, 2020 (CBD, 2020b), two further comments are proposed:

(12) **Baseline.** Any biodiversity target requires a baseline from which to measure changes and to aim at as a target. Yet deciding on an appropriate baseline against which to measure biodiversity change is contentious. Proposed baselines during the Open-Ended Working Group second meeting in Rome ranged from Pre-Industrial times to the date of the 2020 CBD meeting. Neither of these proposed dates meets the core aims of the Global Biodiversity Framework as both practical and ambitious. Developing a practicable target requires a nuanced understanding which integrates the development needs of developing countries to conserve diversity. **Thus, a baseline should include all natural habitats, including degraded areas and marginal land, which have the potential for restoration.**

(13) **Payment for ecosystem services (PES).** In many cases, those who benefit from ecosystem services are at significant distances from the sources. In these cases, it may be that those at the river source or basin are responsible for the continued provision of a service. Thus, this separation between beneficiaries and providers often requires a mechanism which rewards those maintaining the service to enable them to continue to safeguard that process; such as the conservation of river catchments to ensure clean water provision for those in settlements downstream. While this provides the most common example of payment for an ecosystem service, many other examples exist, from the conservation of areas for ecotourism, pollination or cultural services, or on a global scale, oxygen provision. On a global scale, climate funds and REDD can be looked upon as a form of PES, with the service provision being the generation of oxygen. This form of payment was mentioned a great deal within the OEWG framework.

(14) **Linking culture diversity and natural diversity.** A holistic approach for biodiversity conservation will embrace the indivisible linkages between nature, people, and culture. It will recognize and enhance the critical role of a wide range of stakeholders such as IPLCs and women in protecting nature, culture, and identity, and integrating traditional knowledge and good practices into decision making.

2.2 Potential Analysis for Protected Area Expansion for Parties of the Convention on Biological Diversity for 2021–2030.

The Aichi Target 11 of the CBD is composed of several interrelated conditions to protect areas of particular importance for biodiversity and ecosystem services. However, the implementation of Aichi Target 11 has not mitigated the ongoing decline of biodiversity and ecosystem services (IPBES, 2019). Because of varying natural and social conditions among countries, the potential for protected area conservation can be expected to be variable. The responsibility for global biodiversity conservation, the demand and suitable area for protected area (PA) expansion, and the ability of biodiversity conservation under various development or other threats are quite different among nations. If the targets of PA

coverage remain equally set, the overall (unified) percentage goal of PAs will not be achieved. Thus, making explicit PA coverage targets for each party is urgently needed.

The Aichi Target 11 asking for 17% is far from adequate to safeguard global biodiversity (Woodley et al., 2019). To halt global biodiversity loss effectively, previous studies set post-2020 PA targets of about 20% to 50%. IUCN has recently published a massive literature review, the authors of which concluded the range of protection required is from a low end of 30% to 70% and higher. A large global scientific survey showed strong support from scientists for protecting up to half the world (e.g., Wilson, 2016).

Regarding threatened species protection, conservation of 20.2% of the global terrestrial area was proposed. In order to conserve the entire terrestrial species, ecoregions, Important Bird and Biodiversity Areas and Alliance for Zero Extinction sites, a target of 27.9% was put forward. For the conservation of important global areas for biodiversity and ecosystem services such as carbon storage, 31% was set as the bottom line of the post-2020 target. This number becomes even larger in the context of wilderness conservation or the “Half-Earth” plan (see Yang et al., 2020). Therefore, it is urgently necessary to address the issue of feasible and effective conservation in developing the post-2020 global biodiversity framework.

Cost-effective zones for PAs designation were identified and used for setting protected areas coverage targets at global and national levels. The results show the obvious gaps for biodiversity conservation and protected areas designation. Three types of targets were proposed: Ambitious Target, Moderate Target, and Conservative Target. They called for the protection of 43%, 26%, and 19% of the total terrestrial areas, respectively, over the next 10 years (2020–2030) (Yang et al., 2020). The potential for protected areas expansion varies significantly across countries, indicating the necessity to set different targets for different countries. The total number and proportion of 195 parties (excluding the European Union) of the CBD can be divided into six categories (Dudley, 2008) defined by percentage range protected.

The Three Conditions approach provides for target-differentiated settings appropriate to the different conditions of the world. In the Cities and Farms target, a goal of 10% to 20% protection would be ambitious and would require substantial restoration; in the shared lands of the world, a target of 25% to 75% is appropriate depending on the situation; in the large wild areas the target should be to keep at least 80% intact (Woodley et al., 2019). A global target can be set—such as at least 30% by 2030. Such a target should contain a clear call for action simultaneously across each of the three conditions so that all areas receive attention.

3. China's Showcase Efforts for Ecological Conservation

Since reform and opening up, China has undergone rapid economic development, with many ecosystems seriously damaged and polluted. In the 1990s, the Chinese government began to pay attention to the coordinated development of economy, society, and the environment. In 1996, the Chinese government proposed changing the mode of economic growth and implementing a strategy of sustainable development in the Ninth FYP. At the beginning of the 21st century, with the continuous growth and expansion of the economy, natural resource usage, energy consumption, and waste emissions were growing at the same time. Therefore, the 17th National Congress of the Communist Party of China (CPC) (2007) formally proposed the construction of an ecological civilization. The 18th National Congress of the CPC has further decided to promote ecological civilization progress and never sacrifice the environment for economic growth. Adhering to the priority of ecological and environmental protection has become an important principle for China in formulating major development strategies. Chinese President Jinping Xi also attached great importance to the construction of ecological civilization, and put forward a series of new ideas and new strategies for ecological civilization construction. At the same time, ecological civilization has been set as an overarching governing program objective of the CPC (UNEP, 2016).

Under the Ecological Civilization approach, China has formulated the system of main functional areas and ECR. These efforts are driven by the need to optimize land and water space usage and protection

of important ecological spaces. As a result, even though major problems remain, China is making remarkable progress in protecting its ecological environment, setting an example for global ecological protection.

3.1 Establishing Ecological Civilization System and Formulating Top-level Design of National Ecological Protection

In 2007, the report of the 17th National Congress of the CPC decided to promote a conservation culture, which seeks to establish an awareness of conservation theoretically, ideologically, and culturally (Wang et al., 2014). In 2012, the 18th National Congress of the CPC made the strategic decision of “vigorously promoting the construction of ecological civilization,” and incorporated the construction of ecological civilization into the national “five in one” overall layout strategy (Hansen et al., 2018). In May 2015, the CPC Central Committee and the State Council successively issued the *Opinions on Accelerating the Construction of Ecological Civilization* and the *Master Plan of Ecological Civilization System Reform*, which comprehensively and systematically arranged the construction of ecological civilization in terms of the overall objectives, basic concepts, main principles, key tasks, and a system guarantee, becoming the national top-level design of the ecological civilization system. *The Master Plan of Ecological Civilization System Reform* clearly proposed the ecological civilization system, including eight aspects: natural resources property rights regimes, land spatial development and protection system, spatial planning system, natural resources management and overall saving system, paid use system of resources and ecological compensation system, environmental governance system, market system of environmental governance and ecological protection, performance evaluation, and accountability system of ecological civilization. The core point is to respect nature by saving resources, improving the environment, and protecting ecology, while improving prosperity and the well-being of people (Chang et al., 2019).

In terms of ecological protection, the important measures are meant to protect the important ecosystems by optimizing the land spatial pattern (Figure 1). Specifically, there are three main approaches:

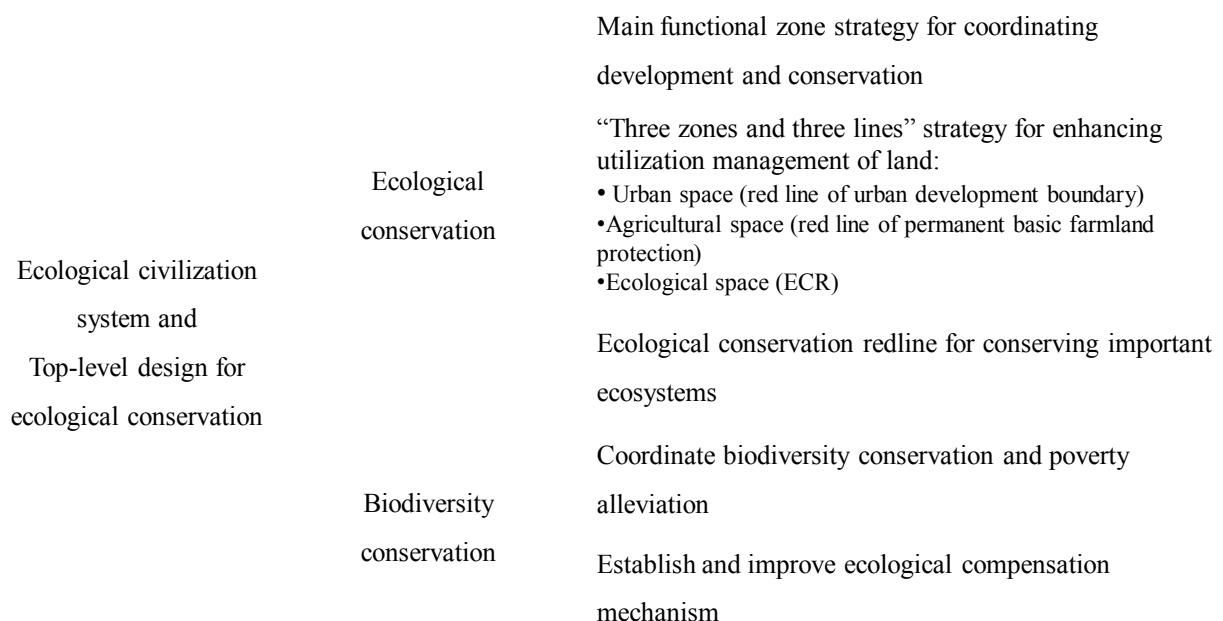
- **From the perspective of protection and development, China has put forward the strategy of main functional areas.** In June 2011, the National Main Functional Area Plan was officially released, which was the first master planning for land spatial development in China. The core point is that based on different regions of the carrying capacity of resources and environment, the current development density and development potential, land and space can be divided into three types according to the development mode: optimized development area, key development area, and restricted and prohibited development areas. In November 2017, the CPC Central Committee and the State Council issued their *Opinions on Improving the Strategy and System of the Main Functional Area*. It proposed that on the basis of strict implementation of the planning of main functional areas, the strategic pattern of the main functional areas at the national and provincial levels should be accurately implemented at the municipal and county levels, which can give full play to the basic and key role of the main functional areas in promoting the construction of ecological civilization and the construction of national spatial governance systems to improve a land spatial development and protection system with Chinese characteristics.
- **From the perspective of land spatial usage, China has put forward the strategy of “three zones and three lines.”** Since the 18th National Congress of the CPC, a series of central meetings and documents have proposed establishing a land spatial planning system in China, promoting the work of “multiple compliance and integration,” and scientifically delimiting “three zones and three lines” (namely, urban space, agricultural space, and ecological space); and ECR, the red line of permanent basic farmland protection, the red line of urban development boundary. In 2015, China’s document *Overall Plan for the Reform of Ecological Civilization System* proposed “to build a national unified, interconnected and hierarchical spatial planning system, with spatial governance and spatial structure optimization as the main content.” Later, in the 19th National Congress of the CPC, it was affirmed that China definitely has to demarcate three lines. In addition, in November 2019, the General Office of the CPC Central Committee and the General Office of the State Council jointly issued the *Guiding Opinions on the Three Control Lines in Land Spatial Planning*, which made detailed provisions on how to define and implement the three lines in the land spatial

planning. It can be seen that with the gradual establishment of the land spatial planning system, the three control lines will be the core elements and mandatory content of the land spatial planning, as an important basis for land space usage and ecological restoration.

- **From the perspective of protecting important ecosystems, China has put forward a national ECR Strategy.** As an important part of “three zones and three lines,” China has put forward the delimitation of ECRs. In November 2011, the State Council issued the *Opinions of the State Council on Strengthening the Key Work of Environmental Protection*, which proposed that “the ECR should be defined in the important ecological functional areas, ecological sensitive and vulnerable areas in land and marine, and the corresponding environmental standards and environmental policies should be formulated for various main functional areas respectively.” In May 2015, the CPC Central Committee and the State Council issued the *Opinions on Accelerating the Construction of Ecological Civilization*, which clearly stated that “the ECR should be defined in the important ecological functional areas, ecological sensitive and vulnerable areas in land and marine, to ensure that the ecological function, ECR area, and its nature remain unchanged.” Subsequently, the delimitation of ECR has been elevated to the legislative level. Accordingly, in the national security law (Article 30), “the State shall improve the system of ecological environment protection, strengthen the ecological construction and environmental protection, delimit ECR, and strengthen the early warning and prevention of ecological risks.”

At the same time, China has put forward a series of effective policies regarding the protection and utilization of biodiversity to strengthen land space optimization and ecosystem protection. Among them, a lot of innovative work is underway on biodiversity and poverty alleviation, the ecological compensation system, carried out practice and demonstration in many places (Figures 1 and 2).

Figure 1. National overall design of ecological protection in China



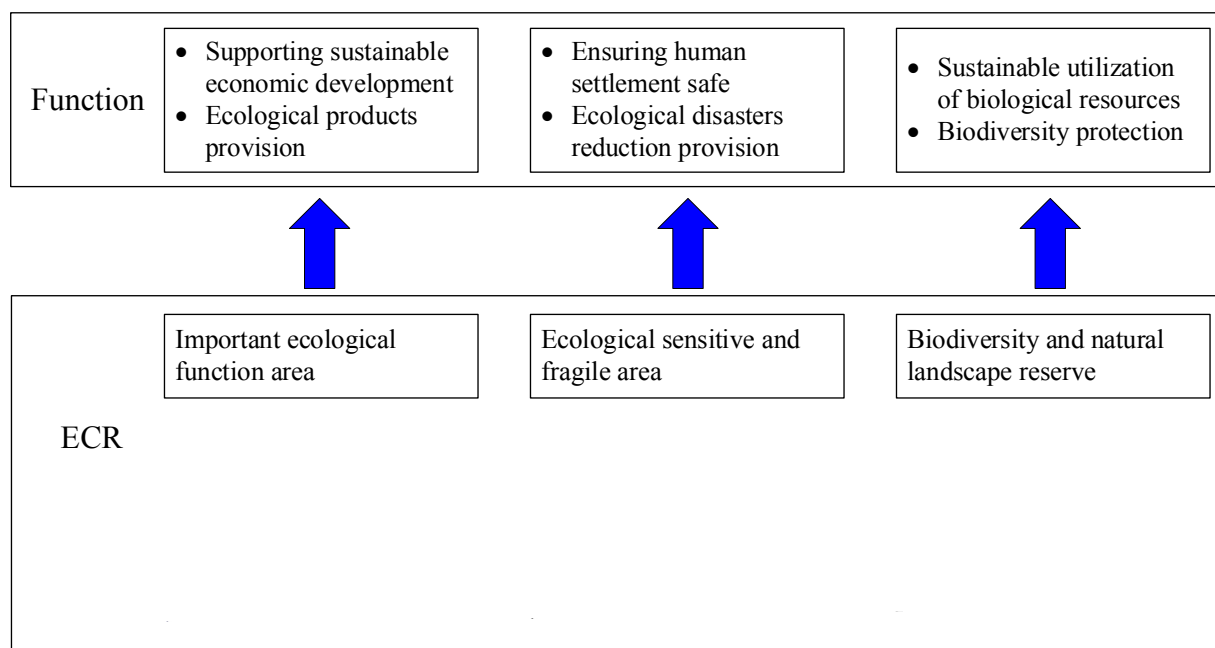


Figure 2 Concept framework of ECR in China

3.2 Delimiting ECRs and Control of Important Ecological Space

Delimiting ECR is a major decision of the Chinese government (Gao, 2019). Compared with existing protected areas at home and abroad, the ECR system is based on ecological service supply, disaster mitigation control, and biodiversity conservation. It integrates existing types of protected areas and supplements the regions where the function of ecological services is extremely important or the ecological environment is extremely sensitive and fragile, so the composition is more comprehensive, the distribution pattern is more scientific, the regional functions are more prominent, and the control constraints are more rigid. It is a major improvement and innovation in the construction of the protected areas system (He et al., 2018; Jiang et al., 2019). In June 2018, the Central Committee of the CPC issued *Opinions on strengthening ecological environment protection and resolutely winning in pollution prevention and control*, and further proposed the goal that the area of ECR should account for 25% of China's total land area. In order to better carry out the delimitation of ECRs, MEE has established a coordination mechanism, taken the lead in setting up a leading group for inter-ministerial coordination of ECR. In February 2017, the General Office of the CPC Central Committee and the General Office of the State Council issued *Several Opinions on Delimiting and Strictly Managing the Ecological Conservation Redline*, which clarified the overall requirements and specific tasks of ECR. Subsequently, MEE has developed guidance documents such as the guidelines for the ECR delimitation, opinions and suggestions on the distribution of ECR in provinces (districts and cities), and technical regulations on ECR demarcation (pilot) to guide orderly ECR delimitation in various regions in China.

Currently, China has made the following progress in delimiting ECR: In February 2018, the State Council approved the plan of ECR delimitation in 15 provinces, including the Beijing–Tianjin–Hebei Region, the Yangtze River Economic Belt, and the Ningxia Autonomous Region. ECR delimitation of all the 15 provinces has been issued and implemented by provincial governments. The other 16 provinces have formed preliminary plans for ECR delimiting. To sum up, China's preliminary ECR areas cover about 25% of the total land area of the country. It is estimated that the preliminary ECR can protect more than 95% of the rare and endangered species and their habitats, nearly 40% of the national water conservation, flood regulation, and storage functions, and about 32% of the wind and sand fixation functions. In addition, in order to strengthen the supervision of ECR, China has launched the construction of the national ECR supervision platform, organized for operation, and hence improved the integrated “ground-air-space” monitoring network. In addition, China has started to work out the management measures for ECR, trying to establish the management system for ECR in terms of the

rule of law, fiscal and tax policies, standard formulation, and law enforcement, thus strengthening ECR management.

3.3 Promoting Biodiversity Protection Through Ecological Poverty Alleviation

In China's thinking regarding ecological Civilization, ecological poverty alleviation is essentially a people-centered green development approach. The Chinese government tries to adhere to eco-environmental situations in poor areas, aiming to realize, maintain, and develop the ecological rights and interests of the people in poor areas. The Chinese government has closely linked the issues of ecology and poverty, ecology and civilization, ecology and sustainable development, so as to effectively and in an orderly way, promote the sustainable development of poor areas. The Chinese government has recognized that, on the one hand, biodiversity protection must be combined with utilization to promote the long-term protection of biodiversity, while on the other hand, many areas with rich species resources are also poor. If the livelihood of local residents cannot be effectively improved, the biodiversity protection invested by the government cannot be maintained over the long term (Liu et al., 2017).

Biodiversity and poverty are key topics of global concern. However, the relationship between biodiversity protection and poverty alleviation is sometimes the unity of opposites (Koch et al., 2007). China's biodiversity-rich regions are mainly concentrated in the poor regions of the central and western regions (Banks-Leite et al., 2014). In the past, residents of poor areas were highly dependent on natural resources, and the excessive use of wild biological resources has a great impact on biodiversity (Whisenant, 1999). For this reason, in recent years, China has also explored and promoted the coordinated development of biodiversity protection and poverty reduction (Clements et al., 2010). The Biodiversity Conservation Strategy and Action Plan identified 35 priority areas, some of which overlap with poor areas. At present, the ecological poverty alleviation work in some pilot areas has had good results. In the process of ecological poverty alleviation, local communities have reduced their dependence on wild animal and plant resources as much as possible. They have reduced their dependence on local resources and promoted poverty alleviation through livelihood substitution and ecotourism, which have achieved good results.

Guizhou Province is one of China's heaviest poverty-alleviation provinces. It has a large poor population, and 50 of the province's 88 county-level administrative units are national key poverty alleviation and development counties. At the same time, Guizhou Province is also one of the Chinese provinces with extremely rich biodiversity. There are 27 county-level administrative units located in national priority areas for biodiversity protection, and 25 county-level administrative units located in national key ecological function areas. There is a high degree of connection between key areas of poverty and key areas of biodiversity conservation. From the perspective of biodiversity protection and poverty reduction, Guizhou Province has explored ways to break the bottlenecks restricting the development of the poor, keep the two bottom lines of development and ecology, and ensure the goal of poverty alleviation. This includes the top-level design of poverty alleviation; the development of ecological industries; the promotion of ecology resettlement projects; and establishing long-term mechanisms for ecological poverty alleviation, etc. Especially for the problems of soil degradation and rock desertification in poor karst areas in Guizhou, many measures have been carried out, such as researching and developing technologies for ecological restoration and economic optimization of degraded vegetation in karst systems, and building a highly efficient ecosystem industrial technology system; developing characteristic forest industries in rocky desertification areas, grassland eco-animal husbandry, soil-water-fertilizer coupled eco-agriculture, rural clean energy and low-carbon economic development and other technical systems and demonstrations; systematic development of special karst features of rural ecotourism boutique lines in karst areas; and implementation of ecological compensation to enhance ecological service functions and improve people's livelihood.

The Chishui Alsophila National Nature Reserve in Guizhou Province covers seven natural villages. The local residents are mainly engaged in traditional agricultural production with a single economic structure and source. The management committee of the protected area guides local residents based on the characteristics of biological resources, take local product development as a breakthrough, use organic cultivation technology to improve the yield and quality of the original bayberry garden; use the

traditional beekeeping culture of the Indigenous people, and build a scientific beekeeping demonstration base. The standardized breeding and large-scale production of characteristic biological resources have played a significant role in creating distinctive brands, carrying out scientific and standardized management, keeping stable prices, and ensuring income alleviation of poverty. They have also reduced the destructive and disorderly exploitation of other resources and played a role in protecting local biodiversity resources.

3.4 Establishing and Improving Eco-compensation Mechanisms

The implementation of eco-compensation is an important means to mobilize the enthusiasm of all parties and protect the ecological environment. Over the past decade, the central government and local governments have actively promoted eco-compensation, pushing forward the construction of a compensation mechanism for orderly ecological protection. However, on the whole, the scope of eco-compensation is still too small, the standards are too low, and the mechanisms connecting protector and beneficiary are not perfect, which affects the impact of ecological environmental protection measures. In order to further improve the eco-compensation mechanism, in 2016, the Chinese government put forward that "by 2020, a complete coverage of important regional eco-compensation such as forest, grassland, wetland, desert, sea, river, farmland and other key areas and prohibited development areas, key ecological function areas, will be implemented. The compensation level will adapt to economic and social development and cross-regional and cross river compensation pilot demonstration will achieve significant progress."

The compensation system related to biodiversity protection includes: public welfare forest compensation; rewards for stopping commercial logging of natural forests; rewards for returning grazing land to grassland; subsidies for grazing prohibition and rewards for balancing grazing and livestock; giving out free seeds or funding the growth of non-native monocultures; important wetland eco-compensation; pilot project of land closure protection and compensation for desertification; subsidies for the breeding, releasing, and ecological environment restoration of aquaculture; compensation of aquatic germplasm resources reserve; compensation for ecological protection in national marine nature reserves and marine special reserves. Various compensatory measures have been promoted in an orderly manner by different authorities and have played an important role in the protection of biodiversity (Buckley et al., 2006).

The establishment of upstream and downstream eco-compensation mechanisms not only ensures the water environment quality of the downstream regions, but also promotes the protection of vegetation and habitat environment in the upstream regions. In 2012, the Ministry of Finance and the Ministry of Environmental Protection coordinated Anhui and Zhejiang provinces in the joint implementation of the cross-provincial eco-compensation mechanism for the Xinan River. On the basis of the success of the first three-year pilot program, a second pilot program was launched in 2015, with a total investment of RMB 700 million for the ecological and environmental protection of the Xinan River. In 2018, the provincial finance department, provincial environmental protection department, provincial development and reform commission and the provincial water resources department jointly issued implementation opinions on the establishment of a horizontal ("same level") ecological protection compensation mechanism for upstream and downstream river basins in Zhejiang province, making Zhejiang the first province to implement a horizontal ecological protection compensation mechanism for river basins in China.

Eco-compensation also could be used to strengthen the breeding research of wild resources, innovate the technology of biological resources development and utilization, and reduce the utilization of wild resources according to the principle of "protection first and sustainable utilization." Through the sustainable utilization of biological resources, the development and use of biological diversity resources will become a new growth point of economic development and a new means for residents to escape poverty.

Table 1. Exploration and practice of ecological compensation in China

Type	Contents	Mode
------	----------	------

Compensation for ecosystem (Vertical ecological compensation)	Services provided by ecosystems such as forest, grassland, wetland, ocean, and farmland	National compensation financial transfer payment; Ecological Compensation Fund; Market transaction
Compensation for river basin (Horizontal ecological compensation)	The compensation of multi-provincial river basin; river basin under local administration	Financial transfer payments; Market transactions; Local government coordination
Compensation for different regions (Horizontal ecological compensation)	Compensation for the west from east region of China	Financial transfer payments; Market transactions; Local government coordination
Compensation for resource exploitation	The development of mining industry; Land reclamation; Vegetation recover	Beneficiary Pays; Polluter Pays; Developer Pays

3.5 Promoting Ecological Civilization With the Construction of Demonstration Districts

The Fifth Plenary Session of the 18th CPC Central Committee and the 13th FYP outline clearly proposed the establishment of a unified and standardized national ecological civilization demonstration district. Several districts were selected to carry out innovation experiments for major reform measures, exploring replicable management systems and effective models, thus leading the construction of national ecological civilization reform in China. In 2016, the General Office of the CPC Central Committee and the General Office of the State Council issued the *Opinions on the Establishment of a Unified and Standardized National Ecological Civilization Demonstration District*, proposing the first batch of pilot districts in the provinces of Fujian, Jiangxi, and Guizhou. Since October 2017, the three provinces have all issued specific implementation plans. Fujian has made remarkable achievements in a number of reform measures, such as the target responsibility system of ecological environmental protection, ecological compensation for the whole basin, comprehensive renovation of small basins, ecological judicial protection, auditing outgoing officials' natural resource asset management, environmental rights and interests transaction, and green finance. Jiangxi Province has established ECRs in water resources and land resources, improved the systems of nature resource property rights and land spatial planning. Jiangxi Province comprehensively implemented the river chief system and the ecological compensation of the whole basin, improved the evaluation system of the goal of ecological civilization construction, and assessment system of ecological environment damage. Guizhou Province has carried out a lot of exploration in improving the systems of nature resource property rights, the development and protection system of land space, payment for environmental resources services and the ecological compensation system, etc. China is actively summarizing the good experience and practice of these demonstration districts, so that their models can be copied and extended throughout the whole country.

In addition, in order to give full play to the typical leading role of the ecological civilization demonstration at the municipal and county levels, MEE has carried out construction activities of the national ecological civilization demonstration city (county) and the practice innovation base of "lucid waters and lush mountains are invaluable assets." Since 2017, MEE has carried out the selection of the first batch of national ecological civilization demonstration cities (counties). By the end of 2019, MEE has carried out three batches, naming 175 national ecological civilization demonstration cities (counties) and 52 "lucid waters and lush mountains are invaluable assets" practice innovation bases. The demonstration work of ecological civilization has the following characteristics: firstly, the demonstration work has been conducted in the eastern, central, and western regions of China. The proportion of the eastern, central and western regions is 43%, 28% and 29%, respectively. Secondly,

the multi-level demonstration system has been further enriched. Among the three batches of demonstration cities (counties), there are 17 cities, 158 counties. There are nine cities, 35 counties, two towns, two villages and other main bodies such as forest farms in the “lucid waters and lush mountains are invaluable assets” practice innovation bases. Thirdly, the demonstration work has covered different ecosystems and regions (such as mountainous, plains, forests, pastoral areas, coastal areas, islands, ethnic minority areas), providing a diversified, vivid, and valuable reference for the construction of national ecological civilization.

4. Post-2020 Biosecurity/biosafety, Biodiversity and COVID-19 Working Paper

The 2020 crisis created by the COVID-19 coronavirus spreading disease reminds us once again that even the smallest forms of biodiversity can bring about devastating impacts for people, our globalized economies, and society. By the end of May 2020, all nations are facing massive expenditure to control the disease and a global economic turndown of historical significance. The world we know will change—perhaps beyond our imagination. However, action on the global environmental emergency must not be sidelined as a consequence. Indeed, action must be strengthened even as damage from COVID-19 continues to spread. There are various concerns that will need to be addressed in relation to ecological and biodiversity matters. These range from environmental impacts that may be related to disease outbreak control; the overriding attention of governments, business and international organizations to address the costly social and economic recovery issues requiring immediate attention and huge financial resources; mechanisms for medium- and longer-term transformative change are going to be needed to meet the full range of emergency recovery—linking environmental, health, economic, and globalization issues. Where will ecology and biodiversity fit into this complex agenda? The question is especially critical at the start of a decade-long effort to accelerate progress on green economy and development, plus transformative change on the UN 2030 SDGs. It is likely that the COVID-19 emergency and recovery will take place over a prolonged period, and therefore need to be taken into account as major factors for environmental and development action throughout the world.

A working paper regarding the biodiversity, ecological, and environmental implications of COVID-19 (*Post 2020 Biosecurity: Global Emergency to Ecological Civilization*) has been prepared for CCICED as a working paper from the Biodiversity SPS. It takes a global perspective, but with special attention given to China’s situation and needs. The paper covers some of the main perspectives and scientific views, drawing from a review of valuable concepts and knowledge generated primarily over the last 10 to 20 years. Also covered are some of the urgent efforts underway at present on scientific, socioeconomic, and policy matters. The latest draft document was completed in mid-July 2020 and submitted to the CCICED Secretariat and MEE. Some of the findings have been incorporated into the recommendations in this SPS report. The document is available in Chinese and English language versions on the CCICED-IISD website: <https://cciced.eco/wp-content/uploads/2020/07/cciced-2020-cn-post-2020-biosecurity-global-emergency-to-ecological-civilization.pdf>; <https://cciced.eco/wp-content/uploads/2020/07/cciced-2020-en-post-2020-biosecurity-global-emergency-to-ecological-civilization.pdf>.

As well, a brief on *Biodiversity and Pandemic Risk Reduction* (see Annex 3) provides a number of important considerations related to animal health and disease as they relate to humans, guidelines on what needs to be improved, and several recommendations.

5. Recommendations

Six recommendations are provided. These focus on enhancing successful outcomes for the CBD COP 15 to be held in 2021, including both multilateral and national approaches. They draw upon analysis in the current report and previous SPS reports submitted in 2018 and 2019. In this pandemic time it is important to recognize the potential opportunities of future COVID-19 recovery efforts now being proposed. These are still at an early stage and require further attention over the coming months.

Recommendation 6 regarding ecological conservation suggestions for China's 14th FYP is included as a contribution to CCICED's input to the State Council.

5.1 China's Global Leadership and Engagement

The global effort required in order to address existing trends of massive biodiversity loss needs strong political leadership. Year 2020, and now also 2021 provides a clear opportunity for humanity to better protect our natural capital. China, as the host country for the CBD COP 15, needs to:

- Play a strong leadership role by engaging with the world leaders to send strong political signals that the international community and national governments (taking a whole-of-government and whole-of-society approach) must realign our relationship with nature, taking actions domestically and globally to bend the biodiversity conservation curve even as they work to flatten the COVID-19 curve. This leadership can take the form of China's top leaders bringing these messages and commitment to the UNGA and heads of state (HoS) Biodiversity Summit and G20 Summit.
- Consider having an HoS segment prior to the CBD COP 15 to ensure that the strong political will and signal can be baked into the CBD negotiations for the post-2020 Global Biodiversity Framework;
- Engage with key parties of the CBD COP 15 to conduct green diplomacy to better understand core concerns, seek implementable agreements, bridge diverging views, and propose ways forward for the world to achieve an ambitious post 2020 GBF.

With the impact of COVID-19, the world we know now will change beyond our imagination. China can emerge as an enabling world leader. The process and platform for agreeing on a robust post-2020 GBF is an unmissable opportunity for China to show green leadership in its efforts with concepts and practices based on over 5000 years of its civilization—and now for its own and global green and sustainable development. Well-organized international communication through virtual meetings is becoming the new normal for both information exchange and negotiation. This is a tremendous opportunity for COP 15 preparations.

5.2 Recommendation for the Post-2020 Global Biodiversity Framework

The following seven points deserve careful attention as key matters for inclusion in the framework, though some may be controversial.

Global Apex Goal: To develop a motivational, communicable, science-based, and measurable apex global goal for a nature action agenda to stop losing and start restoring nature and biodiversity, such that by 2030, biodiversity and nature are recovering at a global scale and by 2050 they will be fully recovered and restored.

Transformative change: Exert the role of ecological civilization to centre conservation strategies and action plans within the scope of the post-2020 GBF.

Common but differentiated responsibilities: Prioritized conservation goals/targets of individual parties according to their national conditions, in particular to differentiating responsibilities for developing and developed parties.

National voluntary commitments (NVCs) and National Biodiversity Strategy and Action Plans (NBSAPs): All parties and stakeholders could develop and publicly present their own voluntary biodiversity commitments (if appropriate) that are integrated into or in addition to their NBSAPs with the aim to support and increase the level of ambition needed to achieve 2030 Mission and 2050 Vision. Ensure parties and stakeholders, if appropriate, to reflect or integrate the goals and targets of post-2020 GBF in their own NBSAPs.

Protected and conservation area and baseline for progress assessment: Accept the *Three Global Conditions* approach in protected areas design and target application by considering differentiated needs for different categories of habitats (Farms and Cities, Shared Landscapes, and Large Wild Areas). All three categories should be managed sustainably, according to criteria differentiated by category and region. The baseline of 2020 might serve as the reference point for zero net loss of nature and biodiversity.

Innovative multilateral financing mechanism: Develop a multilateral financing mechanism for biodiversity and NBSs. Initiated by China (perhaps in collaboration with the hosts of the UNFCCC COP26 to ensure alignment with the climate agenda). The mechanism would finance the strengthening of national policy frameworks for biodiversity conservation and restoration, including integrated land-use planning, and finance initiatives in support of countries' commitments under the CBD and UNFCCC. It would invite other countries to join and seek to leverage private financing.

International collaboration and technology transfer: Develop better global strategies for international collaboration and technology transfer, and for providing training to assist in capacity building for implementation of the established NBSAPs in developing countries.

5.3 Proposal for a Multilateral Nature-Based Solutions Fund Initiated by China to Be Put Forward at CBD COP 15 and UNFCCC COP 26

All parties realize and agree during international consultation and negotiation that financial resources are the key guarantee to fulfill the goals and targets of the post-2020 global biodiversity framework to be negotiated at the COP 15 in Kunming. As emphasized throughout this document, this framework will be intrinsically linked with the Paris Agreement. Financing NBSs is central to achieving the objectives of the Rio Conventions—i.e., the CBD, CCD, and UNFCCC—so financial resources must be mobilized and deployed with a view toward meeting the objectives of both conventions.

It has been said that the annual funding gap for biodiversity conservation and restoration may approach half a trillion USD. Much of the funding will have to come from private investors, but public sector sources are also needed, and removing environmentally harmful subsidies could be a potential source. As past host countries, Japan and South Korea had previously established two funds to support global biodiversity conservation, especially for developing countries, at COP 10 and COP 12, respectively. The Green Climate Fund and the Global Environment Facility are two multilateral financing mechanisms.

In order to facilitate the implementation of the post-2020 global biodiversity framework, we propose that China's government initiate a multilateral fund for nature-based solutions ("NBS Fund") and invite other countries to join. The objective of the NBS Fund will be to enhance the implementation of agreed global conservation and restoration goals for biodiversity and to promote other nature-based solutions in support of the CBD, the CCD, and the UNFCCC. Special focus will be given to support NBSs in developing countries.

Drawing on lessons from China and many other countries, the NBS Fund will support policy and project actions concurrently:

- At the policy level, the NBS Fund will support countries in strengthening integrated national policy frameworks for biodiversity conservation and restoration, along with other nature-based solutions. Among other things, this will include support for land-use zoning and management frameworks drawing on lessons from China's ECR and similar policy frameworks in other countries. International resources, such as the Nature Map, can support such work.
- At the project level, the NBS Fund will co-finance large-scale biodiversity conservation and restoration initiatives and other nature-based solutions. To ensure its long-term success and

alignment with other development priorities of recipient countries, project support from the NBS Fund will be closely aligned with policy support.

To be successful, the NBS Fund should be structured to pursue two key objectives. First, it will aim to mobilize maximum resources from public and private sources. To this end, the NBS Fund will be designed with maximum transparency and a shared governance model that ensures effective operations and broad buy-in. A particular focus will be on enabling private donors to support project activities in the context of improved national policy frameworks. This can be achieved through transparent co-investment modalities, as exist today, for example, for the Global Fund to Fight AIDS, Tuberculosis, and Malaria (“Global Fund”). Similarly, the Asian Infrastructure Investment Bank (AIIB) has, under Chinese leadership, been successful in attracting financing from a large number of partners. Such successes must be replicated for the NBS Fund.

Second, the NBS Fund aims to address both financing and implementation gaps in interested countries. In addition to more financing, we need greater clarity on the policy tools and project mechanisms that can best meet the objectives of the CBD and the UNFCCC. This will require unprecedented innovation and learning. Lessons from other sectors suggest that such innovation and learning can be fostered by combining country-leadership (i.e., recipient countries take the lead in developing funding proposals) and rigorous, independent, technical review of proposals (to avoid any political conditionalities and to ensure that the best, technically sound proposals are financed). The Global Fund has pioneered these governance principles, which have generated tremendous successes in fighting the three major infectious diseases.

The initial scale of the fund should be at least USD 10 billion with periodic replenishment mechanisms contributed by parties, public and private sectors as well as global finance enterprises.

China can work with various parties such as Canada, France, Germany, Norway, Switzerland, and the UK, and other countries who might have the willingness to join and donate, as well as other enterprises and stakeholders, to advance the design and implementation of the NBS Fund, including its governance principles.

In light of recovery from COVID-19 pandemic and economic crashing, China could propose that a portion from countries’ stimulus packages be allocated to help prevent zoonotic diseases and enhance the protection and sustainable use of wildlife, which will subsequently contribute to the conservation of biodiversity and nature.

In addition, regarding other resource mobilization to enhance and facilitate fundraising, we propose including the following key elements as comprehensive resource mobilization components of the post-2020 framework:

- Redirecting and aligning all public and private financial flows to be in line with pathways directed toward halting ecosystem degradation and restoring nature/biodiversity.
- Defining funding needs and targets for mobilizing additional financial resources to achieve the goals and targets of the post-2020 framework.

In addition, we recommend to parties as elements of the long-term approach on mainstreaming of biodiversity into the financial sector:

- Support the creation of a financial sector Task Force on Nature-Related Financial Disclosures (TNFD), to support financial institutions and businesses to measure and disclose their nature-related risks and impacts.
- Support a Global Natural Resource Initiative that would encourage countries to take responsibility for their environmental impacts on other countries through import and consumption policies and investments.

5.4 Recommendations on Improving and Popularizing China's Main Ecological Protection Practices and Experiences Sharing

The considerable efforts of China to protect, improve, and restore its natural areas and their biodiversity; to respect the integrity of ecosystems and their services; and to do so in ways that provide economic benefits especially for rural people will need to be strengthened in the coming 14th FYP and later periods. Certainly, such ongoing efforts are of considerable interest for audiences both within and outside of China. At COP 15 they should be highlighted and used to demonstrate not only how challenges can be met but also how new opportunities for economic and social well-being emerge. The innovation of China's ECRs is particularly important.

(1) Integrating ECR to NBSs for climate change adaptation and mitigation

"Nature-based solution" is an effective approach to addressing climate change. Delimiting the ECR is not only conducive to enhance ecosystem stability and resilience, and adaptability to climate change, but also enhances the carbon sequestration function of the ecosystem, thereby mitigating climate change impacts (Xiao et al., 2017). In September 2019, on the climate change summit of the 74th UN General Assembly, the Chinese government submitted to the General Assembly the action initiative of "delimiting ECR, to mitigate and adapt to climate change—nature-based solutions." According to this initiative, existing practices have proved that the designation of protected areas by ECR can achieve "greater carbon sequestration services provided by a smaller area."

We suggest that the Chinese government should further promote the implementation of the initiative. It can invite improved synergies among the parties of the UN Convention on Climate Change, the Convention on Biological Diversity, the Convention to Combat Desertification and other international organizations, non-governmental organizations and the private sector involved in biodiversity conservation. China can call on all parties to take active actions to integrate ECR into the nature-based solution to adapt to climate change. Thus, it can provide schemes for achieving the goal of the Convention on Climate Change and the Convention on Biological Diversity, make positive contributions to global climate change and the achievement of the objectives of the post Biodiversity Convention.

(2) Introducing important carbon sink ecological function areas to improve the method and result of ECR delimitation

The ECR protects areas with important ecological services, including water conservation, soil conservation, wind protection, and sand fixation, as well as areas with ecological fragility, including soil erosion, land desertification, and rock desertification, which basically covers areas providing important ecological functions. Nevertheless, the delimitation method does not consider the carbon sink function, resulting in a situation where some important areas are not covered by ECR (Yang et al., 2019). According to the current ECR delimitation results, only about 45% of the important carbon sink ecological function areas are covered in the protection scope, which is relatively low. In addition, marine and coastal carbon sinks can be enhanced through ecological redlining along mud banks, in mangrove areas, and various offshore marine reserve areas.

The carbon sink has as an essential climate change mitigate function and offers a natural response to climate change, from both international and domestic perspectives (Marton et al., 2014). Therefore, we recommend that, in the future delimitation of the ECR, research and establish the delimitation method based on carbon sequestration, in order to incorporate important carbon sink areas into protection status, and further improve the delimitation results accordingly. The improved method and result could contribute to address climate change and advance the United Nations Framework Convention on Climate Change.

(3) Integrating ECR into Green Belt and Road Initiatives (GBRI) to prevent ecological damage caused by development activities from happening in the first place

Most BRI countries are emerging economies and are at a critical stage in their development. Therefore, to a certain extent, it is also a critical period of balancing development and ecological protection for

those countries. If a large number of infrastructure projects are green, not only will they promote economic development, but also by their design, they can protect—instead of damaging—the environment. Therefore, preplanning to protect important ecosystems is an important means of avoiding ecological disruption, and the delimitation of ECR can solve this problem while reducing the ecological footprint of BRI countries.

Delimiting ECR is an important component of NBSs, and it has been highly recognized by the international community. It features China's experience for improving PA systems proposed by the World Conservation Union (IUCN), and also provides China's scheme for fulfilling the two major conventions on biodiversity and climate change. In recent years, China has delimited and implemented its ECR system nationwide, and it has played an important role in protecting biodiversity, maintaining important ecosystem services, ensuring the safety of human settlements, mitigating the impacts of climate change, promoting the sustainable development of both the economy and society (Xu et al., 2017).

Therefore, BRI countries can avoid the development of important biodiversity areas, especially nature reserves, virgin forests, and other regions with high biodiversity and uniqueness, by delimiting the ECR. Therefore, we recommend promoting the experience and practice of China's ECR to BRI countries, encouraging BRI countries to develop ECR-based policy frameworks and submit such policy frameworks as countries' national strategies under the CBD and UNFCCC, in order to jointly establish an effective ecological protection network.

Specific measures can be taken in three steps: first, China can establish an expert group both at home and abroad to guide BRI countries to delimit their ECR. Second, carry out training for natural protection personnel and relevant management personnel in the BRI countries. Third, launch ECR delimitation work within the BRI countries, and with other countries that have decided not to participate in the BRI but who want to support better biodiversity and climate policies, making this approach an important element of their ecological protection policy.

(4) Promoting Chinese ecological restoration concepts and practices to increase integrity and connectivity of habitat

Ecological restoration is an important measure for addressing climate change and biodiversity loss, improving ecosystem structure and function, and consolidating national ecological security in China. Over the past few decades, China has planned and implemented a series of ecological restoration projects, including the "Grain to Green" project and natural forest protection projects, which have achieved positive results and played an important role in guaranteeing regional ecological security and sustainable development. However, these previous projects have focused on specific ecological problems at local scale, rather than being systemic and integral in design and implementation, resulting in insufficient optimization and improvement of the entire ecosystem.

Thus, since 2016, China has initiated the ecological restoration practices with greater attention to linkages: mountains-rivers-forests-farmlands-lakes-grasslands. The Ministry of Finance, the former Ministry of Land and Resources, and the former Ministry of Environmental Protection jointly issued the "Notice on Promoting the Ecological Protection and Restoration about these areas. It clearly implemented the pilot work on ecological restoration. This document clearly stipulates that all localities "must uphold the idea of respecting, conforming and protecting of nature, guide ecological restoration practice with the theory of 'mountains-rivers-forests-farmlands-lakes-grasslands' as a life community," fully integrate the funding and policy to launch the overall protection, system restoration, and comprehensive management to up and down the mountain, above and below ground, land and ocean, and upstream and downstream of the basin.

As shown by the practice of restoration, this approach has important effects on improving habitat integrity and connectivity, scientifically responding to climate change, and mitigating habitat fragmentation caused by human development activities. Therefore, the Chinese government could actively promote China's concepts and practices of ecological restoration to the international community, especially to the BRI countries, in order to form a more complete regional or global ecological protection network.

(5) Establishing global ecological protection and risk early warning mechanisms to protect the common interests of all countries

In recent decades, globalization appeared to be an almost inevitable trend of world development. While it brings development opportunities to countries, globalization can also increase environmental and ecological risks. Therefore, it is necessary to establish global risk early warning mechanisms that include ecological protection. In recent years, many ecological disasters have occurred in the world, seriously threatening regional and even global ecological security, such as the forest fires in Australia, coral reef destruction in Southeast Asia, and various disease outbreaks, including the COVID-19 pandemic.

With the deepening of globalization, the ecological destruction that occurs in a country will inevitably affect the neighbouring countries and even the world. Therefore, we recommend that China and/or the Euro-American countries should take the lead in establishing global ecological protection and risk protection with early warning mechanisms to regularly report the ecological protection status of every country in the world, especially major ecological destruction events; organize global experts on ecological protection to build early warning models and methods for different ecological destruction, and gradually form early warning mechanisms covering all countries.

5.5 While Addressing the COVID-19 Pandemic Emergency, and National and Global Economic Recovery, Ensure That Adequate Attention and Financial Support Is Given to Addressing the Eco-Environmental Emergencies Affecting Biodiversity and Climate Change

We have little choice nationally and globally but to ensure that existing investments for environment and development are protected and enhanced in the years ahead. Therefore we must shift our thinking to a strategy consistent with a “Super-Decade of the Environment.”

COVID-19 economic recovery plans should not backtrack to an unsustainable state of economic and environmental affairs. It should be a time for sparking innovation on many fronts. Plans should consider how to live within planetary boundaries, and comprehensively reduce environmental risks, including those to both human health and ecosystem health. This is essential if we are to reach a new level of global biosecurity involving all forms of life and to meet the goals of sustainable development. Only then will we achieve the vision of “Harmony between People and Nature” and, as noted in the CBD COP 15, the theme of *Ecological Civilization: Building a Shared Future for All Life on Earth*.

Our post-pandemic recommendations for ecology and environment cover distinctive time frames: China’s 14th FYP (2021–2025); medium-term plans (2020 to 2030/2035) covering target periods such as UN SDGs and China’s efforts for having a basic national ecological civilization in place; and longer-term to 2050 consistent with various targets related to decarbonization, full realization of biodiversity recovery, and China’s ambitions for a prosperous society and a “Beautiful China.”

(1) During the 14th FYP period, significantly reduce the level of environmental and ecological risks that can lead to human, plant, or animal disease outbreaks, epidemics, or pandemics.

The “One Health” approach linking the health of ecosystems, plant and animal health, and public health should be more strongly supported in China. This will require taking an integrated approach to preventing disease outbreaks. Also, adequate screening of health risks as part of environmental assessments, green development initiatives, and in any stimulus packages with components that seriously increase pollution and greenhouse gases, and disrupt intact ecosystems. Biosecurity for agriculture and animal husbandry requires ongoing review and major improvements.

Scientific research and monitoring need to be greatly improved, especially of disease passed from animals to humans (zoonoses), involving either domesticated animals or wildlife. The recent law with a ban on hunting, the possible prohibition of wet markets, and the revoking of many licences for wildlife

husbandry will help to reduce probability of future cross-species disease outbreaks if strictly enforced but is still not complete enough to reduce risk sufficiently.

The Traditional Chinese Medicine (TCM) exemption from the new law intended to reduce wildlife commerce will weaken the effort to reduce the threat of new disease outbreaks in a number of ways. Therefore, establish a “nature-friendly” 21st Century approach. Various TCM products require attention regarding ecological impacts related to their sourcing. Also, whether rising demand might be met in different ways, for example, by advanced biotechnology applications for animal tissue culture, and substitution strategies to avoid threatened and endangered species such as the pangolin.

(2) Modifying the wildlife conservation laws to improve the capability of biological safety risks prevention and control

The novel coronavirus that is currently ravaging the world once again warns the world that protecting wild animals means protecting all human beings. China’s Wildlife Protection Law was revised once in 2016, establishing the principles of protection priority, standardized use, and strict management. It strictly regulates all aspects of hunting, trading, utilization, transportation, and consumption of wild animals: in particular, a series of scientific and rational systems have been established in response to prominent problems such as overeating wild animals. With the implementation of the revised law, the protection of wildlife has improved. However, in various aspects, there are still some problems. It is necessary to further supplement and improve the Wildlife Protection Law in order to increase the intensity of cracking down and punishing the eating of many forms of wildlife.

Especially after the outbreak of COVID-19, it is urgent to integrate biosafety into the national security system, and systematically plan the construction of biosafety risk prevention and control (along with relevant governance systems) in order to improve national biosafety governance capabilities. It is important to introduce biosafety laws as soon as possible, initiate the revision of the Wildlife Protection Law, and accelerate the establishment of a biosafety legal and regulatory system and an institutional support system.

(3) Strengthen China’s commitment to building ecological resilience as a medium- and long-term transformative approach toward national biosecurity.

China’s significant investment in ecological construction of forests, grasslands, and wetlands, improvement in the management of parks and nature reserves, and integrated management of river basins and coastal areas should be strengthened by setting site-specific ecological resilience goals throughout the country. These can be related to specific needs related to human, plant, and animal health, ecological services, or other needs such as strengthening ecological corridors used as migration routes.

Use ecological redlining as a key mechanism to reduce ecosystem disruptions that are an important factor in disease outbreaks. This would be a means of ensuring full ecological restoration of damaged habitats and maintenance of high biodiversity. Develop criteria related to specific health-related needs for use in determining the location and management of redlined areas.

(4) Establish and lock in new baseline or reference levels of pollution, taking into account air, water, soil and perhaps other forms of pollution reduction experienced during the current coronavirus pandemic.

Evidence is mounting that the economic downturn and health measures related to the COVID-19 pandemic have significantly improved air and water quality, effects of noise pollution, etc., with favourable public reaction. This has been observed not only in China but also in Europe and elsewhere. Every effort should be made to protect these gains, in some cases making the reductions the “new normal” and seeking transformative objectives in stimulus packages where necessary. This is a one-time opportunity to accelerate environmental quality progress, starting now but with a cascading effect

that can last into the medium- and longer-term periods. In order to get the full positive impact, it may be necessary to include tailored green incentives within the stimulus packages.

(5) Ensure economic stimulus packages support green development and protection of nature. Also, do not relax environmental and ecological standards either nationally or in areas hard hit by the disease outbreak. If necessary, provide subsidies or other incentives on a temporary basis. Green stimulus packages specifically aimed at biodiversity or climate change should generally be longer term (5 to 15 years) and dovetail with the short-term efforts on economic recovery.

There are several points to consider for national-level stimulus packages for economic recovery from COVID-19:

- Screening criteria need to be considered for all recovery projects to avoid environmentally damaging investments.
- Focus greater attention on green infrastructure, decarbonization efforts, further stimulus for the transition to renewable energy, public transportation involving transition to electric buses, etc.
- Green employment in various sectors and improved eco-compensation packages. Attention should be given to vulnerable groups in society along with gender issues.
- Maintain green development incentives that enhance ecological services.

6. Recommendations on Ecological Conservation and Restoration for the 14th FYP for China's National Economic and Social Development

The 14th FYP period will be key years for China to build a moderately prosperous society in an all-round way, and also the key period for ecological protection. Therefore we suggest the following recommendations on ecological conservation and restoration for the 14th FYP.

6.1 Add ecological indicators in the indicator session of the plan

The protection rate of key ecological space should be taken as one of the indicators in the plan. According to the delimitation of the national ecological conservation redline, it is suggested that the protection rate of ecological space should be set at 32% in the 14th FYP.

6.2 In view of the chapter "strengthening ecological protection and restoration," it is suggested to add or further emphasize the following contents:

(1) Strengthen biodiversity conservation and take it as an important part of ecological protection.

- For conservation targets, pay attention to the protection of different types of habitats, including farmlands and cities, shared landscapes, and large areas of wilderness.
- For conservation approaches, pay special attention to the synergy between biodiversity and climate change, as well as the coupling effect of biodiversity and green development.

(2) Ecological Conservation Redline should be a critical part of ecological protection and restoration. Detailed suggestions include:

- Monitoring, evaluation, and early warning of ecological conservation redline should be incorporated into the plan as key parts.
- Integrate ECR and NBSs to achieve synergy between climate change and biodiversity.

- It is suggested that the Chinese government should share the concept and approaches of ECR with the international community, especially BRI countries, so as to improve the global ecological conservation network.

(3) The construction of ecological corridors and optimization of homeland ecological security should be included in the 14th FYP.

In the report of the 19th National Congress, it has been clearly proposed to build ecological corridors. Therefore, we suggest adding relevant content in the 14th FYP, such as constructing ecological corridors based on ECR and protected areas, to build an efficient and stable ecological security network and enhance ecological integrity and connectivity.

(4) Strengthen wildlife conservation and risk control, including:

- Strengthen the prohibition of the illegal wildlife trade, strictly prohibit the habit of eating wild animals, and maintain human health and biological safety.
- Protect wildlife, reduce the risk of human or animal disease outbreaks from the source, and control the probability of environmental and ecological risk of epidemic or pandemic.
- Pay attention to the concept of public health, strengthen the concept of “One Health” which connects ecosystem health, animal and plant health, and public health.

(5) Continue to implement the major ecological restoration projects of the Mountain-River-Forest-Farmland-Lake-Grass System

Ecological restoration is an important measure for China to address climate change and biodiversity loss, improve the structure and function of ecosystems, and consolidate national ecological security. During the 13th FYP and for a long time in the past, China has implemented a series of ecological restoration projects, such as returning farmland to forest projects, natural forest resource protection projects, etc. These projects have had positive effects and played an important role in ensuring regional ecological security and sustainable development. In particular, the Mountain-River-Forest-Farmland-Lake-Grass ecological restoration practices since 2016 have played an important role in systematically restoring large-scale ecological environment. Hence, we recommend that these projects should be continued in the 14th FYP.

6.3 We suggest strengthening ecological protection projects regarding major projects, including:

- (1) Investigation, monitoring, evaluation, and early warning projects of ecological conservation redline.**
- (2) Ecological corridor and biodiversity conservation network construction projects.**
- (3) Mountain-River-Forest-Farmland-Lake-Grass ecological restoration projects.**
- (4) Wildlife protection and risk control projects.**
- (5) Ecological protection, restoration, and monitoring capacity-building projects.**

References

- Buckley M.C., Crone E.E. Negative Off-Site Impacts of Ecological Restoration: Understanding and Addressing the Conflict. *Conservation Biology*. 2008.
- Banks-Leite C., Pardini R., Tambosi L.R., Pearse W.D., Bueno, A.A., Bruscagin R.T., Condez T.H., Dixo M., Igari A.T., Martensen A.C., Metzger J.P. Using ecological thresholds to evaluate the costs and benefits of set-asides in a biodiversity hotspot. *Science*. 2014.
- CBD (Convention on Biological Diversity). Synthesis of the views of the parties and observers on the scope and content of the post-2020 global biodiversity framework (CBD/POST2020/PREP/1/INF/1). Jan 2019.
- CBD (Convention on Biological Diversity). Zero draft of the post-2020 global biodiversity framework (CBD/WG2020/2/3). Jan 2020a.
- CBD (Convention on Biological Diversity). Report of the open-ended working group on the post-2020 global biodiversity framework on its second meeting (CBD/WG2020/2/4), Rome, 24-29. Feb 2020b.
- Chang I.S., Wang W.Q., Wu J. To strength the practice of ecological civilization in China. *Sustainability*. 2019.
- Clements W.H., Vieira N.K.M., Church S.E. Quantifying restoration success and recovery in a metal-polluted stream: a 17-year assessment of physicochemical and biological responses. *Journal of Applied Ecology*. 2010.
- Dudley, Nigel. *Guidelines for Applying Protected Area Management Categories*, Gland, Switzerland: IUCN. 2008.
- Gao J.X. How China will protect one-quarter of its land. *Nature*. 2019.
- Hansen M.H., Li H.T., Svarverud R. Ecological civilization: Interpreting the Chinese past, projecting the global future. *Global Environmental Change*. 2018.
- He P., Gao J.X., Zhang W.G., Rao S., Zou C.X., Du J.Q., Liu W.L. China integrating conservation areas into red lines for stricter and unified management. *Land use policy*. 2018.
- Jiang B., Bai Y., Wong C.P., Xu X.B. China's ecological civilization program—Implementing ecological redline policy. *Land use policy*. 2019.
- Koch J.M., Hobbs R.J. Synthesis: is Alcoa successfully restoring a jarrah forest ecosystem after bauxite mining in Western Australia? *Restoration Ecology*. 2007.
- Liu Y.S., Liu J.L., Zhou Y. Spatio-temporal patterns of rural poverty in China and targeted poverty alleviation strategies. *Journal of Rural Studies*. 2017.
- Locke, H., Ellis, E.C., Venter, O., Schuster, R., Ma, K.P., Shen, X.L., Woodley, S., Kingston, N., et al. Three global conditions for biodiversity conservation and sustainable use: an implementation framework, *National Science Review*, Vol. 6, Issue 6, pp1080–1082. Nov 2019.
- Marton J.M., Fennessy M.S., Craft C.B. USDA Conservation Practices Increase Carbon Storage and Water Quality Improvement Functions: An Example from Ohio. *Restoration Ecology*. 2014.

- OECD (Organisation for Economic Co-operation and Development), May 2019. Biodiversity: Finance and the Economic and Business Case for Action, report prepared for the G7 Environment Ministers' Meeting, 5-6 May 2019.
- UNEP. Green Is Gold: The Strategy and Actions of China's Ecological Civilization. 2016.
- Wang X.Y. A Study on Problems and Countermeasures of China's Ecological Civilization Construction. Ecological Economy. 2014.
- Whisenant S.G. Repairing damaged wildlands: a process-oriented, landscape-scale approach, 1999.
- Wilson, Edward O. Half-Earth: Our Planet's Fight for Life, Liveright Publishing Corporation.
- Woodley, S., Locke, H., Laffoley, D., MacKinnon, K., Sandwidth, T, and Smart, J. A review of evidence for area-based conservation targets for the post-2020 global biodiversity framework. Parks, Vol. 25, pp31-46. 2019.
- Xiao L.G., Zhao R.Q. China's new era of ecological civilization. Science. 2017.
- Xu W.H., Xiao Y., Zhang J.J., Yang W., Zhang L., Hull V., Zhang Z., Zheng H., Liu J.G., Polasky S., Jiang L., Xiao Y., Shi X.W., Rao E.M., Lu F., Wang X.K., Daily G.C., Ouyang Z.Y. Strengthening protected areas for biodiversity and ecosystem services in China. PNAS. 2017.
- Yang B.W. Research on Regulatory Framework of Agricultural and Forestry Carbon Sink Trading for Ecological Poverty Alleviation in China Under Policy Guidance. Agricultural Economics and Management. 2019.
- Yang, Rui, et al. Cost-effective priorities for the expansion of global terrestrial protected areas: Setting post-2020 global and national targets, Science Advances (in Press). 2020.

Annex 1. Momentum Built for Actions on Nature and People

The Sharm El-Sheikh to Kunming Action Agenda for Nature and People

Contributed by Marcel T. J. Kok of PBL Netherlands Environmental Assessment Agency, Bezuidenhoutseweg 30, 2594 AV The Hague, The Netherlands

The Sharm El-Sheikh to Kunming Action Agenda for Nature and People, was launched by China, Egypt and the secretariat of the CBD with the aim to raise public awareness about the need to halt biodiversity loss and to restore nature; to inspire and help implement NBSs to meet key global challenges; to catalyze cooperative initiatives across sectors and stakeholders in support of the global biodiversity goals. The CBD Secretariat has subsequently established a platform on its website where commitments can be registered.

So far only a few commitments have been registered and many of them already existed before COP 14. At the same time many new coalitions are emerging in business, cities, and local communities, suggesting that indeed a groundswell of action might be emerging. China could tap in on these coalitions, networks and non-state commitments at COP-15 and beyond. Furthermore, the Action Agendas that have been set up in other policy domains like oceans, SDGs and climate, are also highly relevant for showing a growing momentum for biodiversity and showing interlinked efforts in other policy domains.

In the run up to COP 15 the Action Agenda could help building confidence for governments to be ambitious at COP 15, knowing that multiple non-state and subnational actors support stronger action. The Action Agenda as it currently stands does require leadership from China together with other leading countries in cooperation with leaders of societal coalitions to support the further development of the Action Agenda, to show the groundswell of action and further catalyze the momentum.

Here political and practical support from China is important. Some suggestions for this would be: to develop narrative Action Agenda and make clear where commitments need to be about; to link the Action Agenda for Nature and People to other action agendas and highlight biodiversity commitments made in other policy domains; generate and showcase as many new commitments as possible; focus on actors currently less/not involved such as financial sector, agrobusiness, landscape and supply chain initiatives.

The longer-term challenge is to establish credible and ambitious commitments beyond 2020, and this requires establishing a system for measuring and reporting progress as part of the broader accountability framework for CBD Parties in the post-2020 GBF.

One important step is to make the Action Agenda becomes an integral part of the post-2020 GBF, as this will provide some clarity about the long-term direction for stronger non-state involvement in the CBD. A clear signal by China about this and encouraging non-state actors to participate and contribute might be important.

The Nature Champions Summit, Montreal

“We **Nature Champions** gathered in Montreal are beginning a global mobilization with this **Call to Action**, jointly committing to take a different, better path that puts nature first, recognizing it is the context for all life including human life and protecting it accordingly. Collaboratively, we the Nature Champions commit to place nature's needs at the heart of all global agendas including:

- Recognizing the fundamental link between nature, a stable climate, human well-being, and sustainable development for all;
- Uniting nature conservation objectives with addressing climate change and developing NBSs that are effective for both;
- Promoting an ambitious set of new targets for the UN Convention on Biodiversity (CBD) that has clear and measurable objectives for 2030 and effectively enables the world to reach the 2050 Vision of Living in Harmony with Nature;
- Widening the participation in the Convention on Biological Diversity Strategic Plan beyond governments to include commitments and actions by a wide range of actors;

- Addressing nature's needs by increasing the proportion of land and ocean that we protect and conserve around the world and improve the way we manage and restore it;
- Addressing the key drivers of nature loss across the world by enhancing concrete action on:
 - reducing habitat-loss and deforestation;
 - curbing terrestrial and marine pollution; and
 - developing and strengthening sustainable supply and value chain management;
- Embracing nature-based decision making in all key political, economic, cultural, and social decisions;
- Increasing investment in nature conservation and leveraging existing commitments to mobilize new resources; and
- Recognizing and enhancing the role of subnational governments, cities and other local authorities as well as of Indigenous peoples, local communities, women and youth in the protection of nature

High-Ambition Coalition for Nature

This is an intergovernmental group championing a global deal for nature and people that can halt the accelerating loss of species, and protect vital ecosystems that are the source of our economic security. It is launched at the UNGA 74. It is co-lead by the government of France and Costa Rica. The High-Ambition Coalition (HAC) will utilize the upcoming UN Framework Convention on Climate Change (UNFCCC) COPs and the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity in 2020, to push for ambitious, science-driven global action to safeguard nature and humanity's future.

As the HAC for Nature and People gathers momentum and grows it will work toward a global deal that includes the following key elements:

- Sustainable management. The entire planet must be managed sustainably with no net loss of natural habitats, supported by a circular economy, and managed for the sustainable and equitable sharing of benefits from nature.
- New spatial targets to protect biodiversity. There must be increased spatial targets to protect or effectively conserve at least 30% of the planet - land and sea - by 2030. Efforts should promote indigenous-led conservation and focus on areas most important for biodiversity. The resulting network of conserved areas should be ecologically representative, well-connected, effectively, equitably managed, and help to maintain species diversity.
- Improved management of existing protected areas. Management must be improved for the entire system of protected and conserved areas around the world. The best available science should be used and sufficient resources made available to deliver the desired conservation outcomes.
- Increased funding. Additional public funding and private financing from corporations and philanthropists must be mobilized to support the long-term management and local governance of protected and conserved areas around the world.
- Implementation: Once these pillars are adopted, the HAC needs to have a clear implementation mechanism that is gradually enforceable and can be incorporated into national development strategies and key economic sectors.

Trondheim Conference

The ninth Trondheim Conference on Biodiversity was held in Trondheim, Norway, from July 2 to 5 2019. Since 1993 Trondheim Conferences on Biodiversity have created opportunities for increasing understanding amongst stakeholders about issues on the biodiversity agenda. They allow those involved in setting the agenda to learn and to share views and experiences with their peers. The ninth Trondheim Conference brought together decision-makers and experts from around the world to learn about and discuss knowledge and know-how for the global post-2020 biodiversity framework. The Conference seeks to support the [process established by the Convention on Biological Diversity](#) for preparing this

framework, with opportunities for major players to discuss key issues informally outside of the negotiation process.

This SPS has two team leads (Prof. Ma Keping and Dr. Li Lin) who took part in the conference. The SPS gained insights from interactions with actors at various related events. We have organized two dialogues with representatives from developing countries and with ministers from a few developed countries. The detailed notes can be found in Annex 2-1 and 2-2.

We noticed both common issues of importance as well as divergence on some matters.

The issues of common concerns are:

- “Nature” is a better term than “biodiversity” when communicating to society.
- Manage space for conservation alone will not achieve conservation goals. Need to address quality of protected areas and more importantly drivers behind biodiversity loss.
- Ecosystem based adaptation and restoration is necessary.
- Climate change and biodiversity conservation are inseparable.
- whole government and whole society approach is needed.
- The importance of CBD needs to be elevated.
- Local communities and indigenous knowledge should be considered in policy discussions.
- Strong and effective implementation is essential in delivering the needed outcomes.

The matters of divergences or non-agreement are:

- Conservation burdens are not shared equally among countries.
- Funding and coordination from developed countries are expected.
- Approaches and responsibilities are different between countries.
- Capacity building and knowledge sharing are needed.

Our general impression is that

1. Some developing countries are proactive in taking the actions in their own country’s hand, while some others felt hands tied
2. Developing countries should take the leadership
3. ASEAN Center of Biodiversity is interested in exchange and cooperation with China, linked the ecological conservation redlines. ASEAN Environmental summit in March 2020
4. How can we bring ministries of environment and finance together to discuss nature
5. Asking CCICED to consider how to support developing countries on post-2020 biodiversity framework development and conservation
6. Utilizing the global and national commitment on SDGs to enhance the role of nature and to mobilize in country other more powerful ministries and players.

These are the issues that China needs to pay attention to while engaging with global actors.

Annex 2. Evidence for Decision Making

Food and Land Use Report. Ten Critical Transitions to transform Food and Land Use

Launched in Oct. 2019, the [Food and Land Use Coalition \(FOLU\)](#) report is the first to assess the benefits of transforming global food and land-use systems as well as costs of inaction, reveals benefits that far

outweigh the costs and proposes actionable solutions, many already in existence. The report calls on global leaders to act now and advance the economic case for change.

It is estimated that the ways in which people produce and consume food and use land currently account for USD 12 trillion a year in hidden costs to the environment, human health and development, costs that are set to rise to USD 16 trillion by 2050 if current trends continue.

The report discloses benefits that far outweigh the costs, proposing a concrete reform agenda centered around ten critical transitions. These stand to unlock USD 4.5 trillion in new business opportunities each year by 2030, at the same time as saving costs of USD 5.7 trillion a year in damage to people and the planet by 2030, more than 15 times the investment cost of up to USD 350 billion a year.

The report's ten transitions include – but are not limited to – measures to protect and restore nature and climate, empower and protect indigenous communities, finance NBSs, promote a diverse and healthy diet, reduce waste, and strengthen rural economies.

The report calls for collective action to unlock the potential for better food and land-use systems, including through policy reform, country-led action and individual engagement in support of the critical transitions. Many solutions are already in existence, in need of support and funding to scale up.

The Global Risks Report 2020

Launched in Jan. 2020, this is a WEF report that received input from over 750 global experts and decision-makers to rank their biggest concerns in terms of likelihood and impact of global risks. For the first time in the survey's 10-year outlook, **the top five global risks in terms of likelihood are all environmental**. The report forecasts a year of increased domestic and international divisions and economic slowdown. Geopolitical turbulence is propelling us toward an “unsettled” unilateral world of great power rivalries at a time when business and government leaders must focus urgently on working together to tackle shared risks.

This would prove catastrophic, particularly for addressing urgent challenges like the climate crisis, biodiversity loss and record species decline. The report points to a need for policy-makers to match targets for protecting the Earth with ones for boosting economies – and for companies to avoid the risks of potentially disastrous future losses by adjusting to science-based targets.

The report sounds the alarm on:

- Extreme weather events with major damage to property, infrastructure and loss of human life.
- Failure of climate-change mitigation and adaptation by governments and businesses.
- Human-made environmental damage and disasters, including environmental crime, such as oil spills, and radioactive contamination.
- Major biodiversity loss and ecosystem collapse (terrestrial or marine) with irreversible consequences for the environment, resulting in severely depleted resources for humankind as well as industries.
- Major natural disasters such as earthquakes, tsunamis, volcanic eruptions, and geomagnetic storms.

It adds that unless stakeholders adapt to “today’s epochal power-shift” and geopolitical turbulence—while still preparing for the future—time will run out to address some of the most pressing economic, environmental and technological challenges. This signals where action by business and policy-makers is most needed.

New Nature Economy Report

WEF is planning a New Nature Economy (NNE) report series that will make the case for why the nature crisis is crucial to business and the economy; identify a set of priority socioeconomic systems for transformation; and scope the market and investment opportunities for NBSs to environmental challenges.

The first report discusses the nature emergency, the risks of nature loss to businesses, how to manage these risks and how to take action.

Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy

This is the report that WEF jointly produced with PwC. Launched in Jan. 2020, it is the first report in the NNE report series. It explains how nature-related risks matter to business, why they must be urgently mainstreamed into risk management strategies and why it is vital to prioritize the protection of nature's assets and services within the broader global economic growth agenda.

The report notes that “every industry sector has some degree of direct and indirect dependency on nature” and identify nature loss as a “fat-tail risk like the 2008 asset-price bubble.” They point out that pursuing a “nature-positive way of doing business” can mitigate future economic and societal shocks.

The report discusses how risks to nature manifest as risks to business across all sectors. It highlights “that \$44 trillion of economic value generation – more than half of the world's total GDP – is moderately or highly dependent on nature and its services and is therefore exposed to nature loss.”

The Nature of Risk: A Framework for Understanding Nature-related Risk to Business

Scientific consensus is building around risks to business from the loss and degradation of nature, or “nature-related risks.” These risks are not adequately addressed by businesses, and to be addressed, they need to be considered together with climate-related risks. The two are inextricably interlinked because climate change drives change in nature, and change in nature drives climate change.

The terminology used in this report draws on both nature- and climate-related risk to facilitate a unified approach. This report and framework aim to catalyze the incorporation of nature-related risks into private sector decisions in a manner that facilitates sustainable development at all scales.

This WWF report launched in September 2019 includes:

1. A literature summary of existing work on the topic that outlines how nature-related risk is not adequately accounted for by businesses.
2. A synthesis framework for how nature-related risk emerges that builds on the many existing frameworks and that brings together understanding of natural capital and climate-related risk.
3. A typology based on analysis of existing literature which serves as a proxy for risks that are most widely acknowledged as high importance.
4. A set of case studies—examples of businesses facing consequences due to nature-related risk.

Nature Is Too Big to Fail – Biodiversity: the next frontier in financial risk management

This is a report jointly launched by PwC Switzerland and WWF Switzerland in Jan. 2020. The report finds that the financial risks associated with the loss of biodiversity will become increasingly important in 2020 - especially in the lead up to the United Nations Biodiversity Conference in October in Kunming (China).

As climate change and the loss of biodiversity mutually reinforce each other, decision-makers face a huge challenge to respond to this double crisis, as the risk of financial market instability significantly increases.

Loss of biodiversity is an unrecognized environmental risk

Climate change is a financial risk and recognized as such by a growing number of financial actors and regulators. A related but unrecognized environmental risk is the rapid loss of global biodiversity. Climate change further accelerates the extinction of species and leads to rapid changes in ecosystems. This in turn drastically limits natural carbon sequestration of ecosystems, which again worsens climate change. A negative spiraling loop, which has been until today almost completely ignored by decision-makers, the financial sector and their regulators.

“It is particularly dangerous for the financial sector to not account for biodiversity loss, as all economic sectors in which they invest, finance or insure depend on biodiversity. To avoid financial instability, we

urge central banks and financial regulators to assess the financial risks stemming from environmental degradation more thoroughly, and to act accordingly,” says Andreas Staubli, CEO of PwC Switzerland.

Thomas Vellacott, CEO of WWF Switzerland: “Biodiversity-related financial risks have not only been completely ignored by the financial sector but also by decision-makers globally. It is time to respond swiftly to the double crisis from biodiversity loss and climate change. Thus, humanity is in urgent need for a New Deal for People and Nature. All market, governmental and civil society actors are needed. Nature is too big to fail.”

Four biodiversity-related financial risks defined

The report suggests a typology of four financial biodiversity-related financial risks: physical, transition, litigation and systemic risks. The report further highlights what can be learned from the discussions around climate-related financial risks, provides a framework on how to integrate biodiversity losses into the classical risk framework of financial institutions and also suggests recommendations to financial regulators/central banks, financial market players and states/international organizations:

- States agree to an ambitious Global Biodiversity Framework at Kunming (China) in 2020 by bringing all financial flows in line with biodiversity conservation and restoration (Paris Agreement Obj. 2.1.c equivalent for biodiversity).
- The funding gap for biodiversity conservation and restoration of at least half a trillion US dollars per year needs to be closed by all actors rallying together.
- As biodiversity-related financial risks and the spiraling effect with climate change pose a systemic risk, all central banks and financial regulators need to emphasize the importance that the regulated entities regularly disclose their biodiversity-related financial risks. Furthermore, stress tests regarding biodiversity-related financial risks should be run regularly.
- A task force on Nature-Related Financial Disclosures should be created in 2020. It should drive standardized disclosure on nature-related risks, taking into consideration the physical, transition, litigation and systemic financial risks that stem from biodiversity loss.
- All financial actors should proactively manage biodiversity-related financial risks and seize and secure opportunities offered by ecosystem services (e.g., flood protection, pollination, clean water, fertile soils and adaptation to climate change).

Economic and Financial Systems and Tools to Develop Biodiversity Conservation

This report jointly published by WWF France AXA in May 2019, is on the financial risks associated with the loss of biodiversity, including *physical* risks (e.g., linked to supply shortage), *transition* risks (e.g., related to industrial or commercial developments) and *reputational* risks. This report reviews existing initiatives related to assessments of companies' impact on biodiversity, risks and opportunities for financial institutions and related reporting stakeholders. It identifies best practices and the most promising technical and political perspectives on these issues. It also proposes a roadmap to develop biodiversity finance commensurate with the current biodiversity crisis.

Studies in the Making

- Costs, Gaps, and Benefits to protecting 30% of the Planet, sponsored by Campaign for Nature
- Financing mechanisms to effectively finance the world's conservation needs, sponsored by Paulson Institute, The Nature Conservancy, and Cornell University
- The business and economic cases for nature, sponsored by WEF
- Independent global review on the economics of biodiversity and its relationship to economic growth, sponsored by UK government, Professor Sir [Partha Dasgupta](#)
- Biodiversity: Finance and the Economic and Business Case for Action, sponsored by OECD
- Natural capital valuation and analysis of protected areas in Africa, sponsored by German Federal Ministry for Economic Cooperation and Development (BMZ) and *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ English: German Corporation for International Cooperation)



- Update to the '[Little Biodiversity Finance Book](#): A simple guide to financing the Global Deal for Nature', sponsored by Global Canopy
- Resource mobilization and financial mechanisms for major CBD components: conservation, sustainable use and access/benefit sharing of genetic resources, sponsored by Convention on Biological Diversity
- Study and quantify how biodiversity loss may affect future economic growth, sponsored by the World Bank
- Living Planet Report 2020, WWF

Annex 3. Biodiversity and Pandemic Risk Reduction

Contributed by Dr. Alice C. Hughes, a scientist at the Centre for Integrative Conservation, Xishuangbanna Tropical Botanical Garden.

Pandemics will continue to occur whilst we unsustainably use natural resources, thus better modes of governance for the use of wildlife and the maintenance of healthy ecosystems are needed. Linking ecological integrity to pandemic risk reduction is an important consideration for China's Ecological Civilization. No time can be more significant for doing so than now, given the unprecedented efforts and costs associated with the existing outbreaks. Also given China's hosting of the CBD COP 15 in October 2020, there are opportunities for promoting innovative approaches. While the Global Biodiversity Convention has recognized the need for linking health of people to planetary health, stronger actions must be put in place in line with the UN 2030 SDGs. Thus living in harmony has inherent benefits, in addition to being key to fulfilling the vision of eco-civilization and maintaining beautiful China, in addition to strictly adhering to international conventions including CMS, CBD and CITES.

Whereas domesticated animals may be kept in good conditions, well fed and frequently dosed with antibiotics and screened for infection, the same is not true for animals captured from the wild. Poor quality habitat and poor nutrition can both lead to immunosuppression in wildlife, and thus may be particularly likely in habitat patches surrounding human habitations (3). In addition whereas most livestock should be vaccinated, and screened and therefore have reduced exposure to pathogens, the same is not true for wild-caught animals, which especially in degraded habitats may also have larger ranges and higher levels of exposure to pathogens.

The ability of wild animals to carry diseases also varies dramatically by group. In recent years a number of pandemic diseases have emerged either from the direct consumption of wild animals or close contact between wild-caught and domestic animals for consumption, especially when hygiene standards are poor. Threat is at its highest if animal products are eaten raw, thus the consumption of fresh blood or tissue has a very high chance of passing on diseases, including not only viruses such as corona but even prions and virioids which would be destroyed through the cooking of tissue.

Globally most pandemics in recent years started with the capture and normally consumption of wildlife, with bats and carnivores posing the greatest risk of sources or diseases with the potential to cross into humans, and should be consumed in no circumstances. Pandemics originating in these groups, or using them as an intermediate vector include SARs, MERs, Ebola, Nipah and now Covid-19 (among others). Of these Ebola is likely through direct consumption of bats, though some other mammals can also be carriers, Nipah originates in bat urine (normally through the consumption of toddy wine, which if left open bats can drink and urinate into), and the three coronaviruses; SARs, MERs and Covid-19; which likely originated in bats or civets and were transmitted into humans through civets or another intermediate host. Bats (especially Rhinolophids) and Civets show similar expression of the viral genes, and similar viral genomes, thus both have the potential to be a source for the viruses though the transmission route into humans is little known. Thus minimizing contact between people and these groups, and ensuring high-quality habitats to reduce the susceptibility, spread and any infection risk between wild animals and humans has multiple benefits in terms of enhanced service provision and decreased risks of diseases.

We recommend that a well-coordinated effort be initiated to break the link of zoonotic sources with human disease outbreaks. The effort should become a key part of China's shift to become an ecological civilization by 2035. It should be started immediately, fully implemented during the 14th FYP, and be continued with partners abroad and globally. These regulations include multilateral agreements on biosecurity and trade, and be a well-integrated component of the Belt and Road Initiative.

Ten core principals to ensure the protection of biodiversity and maintenance of biodiversity have been outlined in the Berlin Principles. In addition domestic (i.e., 2018 Law of the People's Republic of China on Wildlife Protection) and in international regulations need to be implemented based on common standards, definitions and defined and agreed upon reporting structures to provide the requisite information for monitoring and ensuring sustainable and safe trade as detailed below.

Recommendations which refer to “wild animals” or wildlife” applies to any mammal species that is not a captive bred ungulate or rabbit with small numbers of exceptions (detailed below) and not limited to the 342-408 animals currently recognized as nationally protected, or 981 provincially protected.

Ultimately reducing the risk of transmission of diseases from animals to humans has three major facets which act to reduce the risk of infection and spread of diseases in wild animals, reducing the risk of any diseases moving from wildlife into humans and the decreased risk of captive populations harbouring or passing on diseases. Definitions and further discussion behind these recommendations are provided after recommendations

Reportage of violations of any provisions outlined below should be possible through a wechat mobile app to reduce the cost of reportage. Reduced ambiguity herein enables enforcement by making the sale and consumption of wild animals illegal (given that at least 70% of zoonoses are from wild animals), and standardizing these regulations across all provinces and counties of China maximizes safely and enforceability.

1). Maintaining healthy native populations and minimizing risk of contagion

a). Natural areas should be redlined and a zero net loss in intact habitat aimed for to provide healthy habitats.

b). Prevent the destruction of caves, and decrease mining of karsts with known caves.

c). Hunting of wildlife should be limited to ungulates, based on licences and a quota, all reportage should be overseen by local police. Consumption for food of mammals other than ungulates or rabbits should be considered illegal.

d). Farming of rodents other than rabbits should also be limited except under very special circumstances due to disease risk. For other mammals only ungulates should be farmed for commercial purposes.

e). Wildmeat (deer, pig) if for sale at all should only be from licensed sellers and of species known to be unlikely to transmit diseases based on a quota and must be refrigerated and kept separate from other meat.

f). Prevent wild animals entering supply chains, wild-caught animals should at no time be openly for sale, or breeding stock (outside conservation programs within zoos or scientific institutes)

g). Wildlife markets should be closed to prevent contact between wildlife and humans. As this is challenging in border markets (particularly Mongla and to a lesser extent Botan on Myanmar and Lao borders) borders should be entirely closed to human entry.

h). Imported wildlife intercepted at international crossings should be repatriated or sent to centralized holding facilities where they can be screened for diseases and rehomed to appropriate long-term facilities, all imported specimens require quarantine in designated facilities

i). Plant based traditional medicine should be further developed. Where unavoidable animal ingredients should be through licensed sellers subject to regular screenings, and pasteurized or treated through ultra-heat treatment.

j). The Catalogue of National Key Protected Wild Animals for Artificial Breeding should be re-examined to list species that can be bred in captivity and their purpose, and align with measures listed in part 2. International trade should also reflect the Agreement on the Application of Sanitary and Phytosanitary Measures to prevent international trade of wildlife for consumption unless treated or

cured using heat or chemical treatment to prevent any disease risk, based on common standards and clearly noted.

k). Import of species should utilize a system such as LEMIS which clearly states the origin, source, purpose and recipient of any imported products from wild animals, and be in full compliance with CITES regulations.

2). Preventing infection in captive animals

Outside zoos and licensed scientific facilities (including medical facilities), only livestock (ungulates, rabbits, chickens, etc.) should be bred for consumption, or other consumables (i.e., leather), below regulations relate to the captive rearing of these animals, exceptions to this should be detailed in article 1i the Catalogue of National Key Protected Wild Animals for Artificial Breeding.

a). Animal welfare ties directly to disease susceptibility and spread, thus minimum welfare standards should be applied to the keeping of captive animals. Foods provided for livestock animals should not be based on waste animal products, or meat. Administrative Measures for the Safe Production of Animal-derived Feed Products should be updated accordingly.

b). Central databases captive mammals for all mammals over 3kg. Individuals should be listed in the database, health checks and vaccination status noted, in addition to owner and previous owners.

c). For non-domesticated animals bred in captive conditions, especially carnivores (tigers, bears) online registry should include an individual genetic barcode which can be used to verify identity and prevent wild-caught individuals being bought into the system (see 2b). This practice should be limited as much as possible and largely used for zoos and scientific institutes rather than commercial facilities, as the disease risk is higher, as is the motivation to launder animals into the system.

d). Entities responsible for fulfilling these criteria are listed below and should be regarded as an update to information on National Key Protection of Wild Animals Domestication and Breeding Licences; licences can only be attained as detailed for ungulate species, and some birds (once a list of species has been developed). The domestication and wild capture of other species for commercial or consumption purposes is not permissible http://www.forestry.gov.cn/portal/main/govfile/13/govfile_2156.htm

e). Develop certification and quarantine facilities for imported animals. Wild-caught animals should only be kept as part of scientific studies or conservation programs, not for consumption or commercial programs.

f). Prior to domestic transportation live animals (excepting personal pets) require medical check certification.

3). Preventing transmission into humans

a). Meat should not be sold in open conditions but only by licensed sellers in shops where it can be kept refrigerated and isolated. Blades should be sterilized between uses, and waste meat incinerated. No meat should be for sale in open conditions. All meat sources should be inventoried

b). No restaurant should be able to sell uncooked or uncured meat or blood

c). Live animals sold in markets must have bedding changed and burned and the market washed and disinfected three times weekly.

d). Alternatives to current high status food items (i.e., traditional regional Chinese dishes/food varieties) should receive investment.

f). Invest in development of synthetic alternatives to animal based materials.

