



CCICED

SPECIAL POLICY STUDY REPORT

Green BRI and 2030 Agenda for Sustainable Development

2020

Policy Studies Release
September, 2020



Special Policy Study Members

Co-Leaders*:

- Ms. ZHOU Guomei, Chinese Co-Leader, Executive Director General of Foreign Environmental Cooperation Center, Ministry of Ecology and Environment (MEE)
- Mr. SHI Yulong, Chinese Co-Leader, Director-General, China Center for Urban Development, National Development and Reform Commission
- Mr. Kevin P. Gallagher, International Co-Leader, Professor of Global Development Policy, Director of Global Development Policy Center, Frederick S. Pardee School of Global Studies, Boston University

Senior Advisors:

- Mr. GUO Jing, Director General, Department of International Cooperation, MEE
- Mr. PAN Jiahua, Director General, Institute for Urban and Environmental Studies, Chinese Academy of Social Sciences
- Mr. GAO Jixi, Director General, Center for Satellite Application on Ecology and Environment, MEE
- Mr. YE Yanfei, Director General, Policy Research Bureau, China Banking and Insurance Regulatory Commission
- Mr. MA Keping, Secretary-general of the Biodiversity Committee of The Chinese Academy of Sciences, Researcher, Institute of Botany, Chinese Academy of Science
- Ms. LI Yijun, China Development Bank
- Ms. Aban Marker Kabraji, Regional Director, Asia Regional Office of IUCN
- Mr. Guido Schmidt-Traub, Executive Director, Sustainable Development Solutions Network (SDSN)
- Mr. David Wilcove, Professor of Ecology and Evolutionary Biology and Public Affairs, Princeton University
- Mr. Thomas Lovejoy, Professor of Environmental Science, George Mason University
- Mr. Andrew Deutz, Director, Global Policy, Institutions & Conservation Finance, the Nature Conservancy
- Ms. Karen Kemper, Global Director for the Environment, Natural Resources and Blue Economy Global Practice at the World Bank
- Ms. Caroline Kaiser, Managing Director, NatureVest, TNC
- Ms. Rose Niu, Chief Conservation Officer, Paulson Institute
- Ms. Nathalie Bernasconi, Senior Director, International Institute for Sustainable Development
- Mr. Jesús Ramos-Martín, Ecological Economist/Rector, Universidad Regional Amazónica IKIAM



Expert Team*:

- Mr. GE Chazhong, Director, Environmental Strategy Institute, Chinese Academy for Environmental Planning, MEE
- Ms. LAN Yan, Senior Engineer, Deputy Director, Foreign Environmental Cooperation Center, MEE (Coordinator)
- Mr. DONG Liang, Assistant Research Fellow, Institute of Asian Studies, China Foreign Affairs University
- Ms. WANG Lixia, Senior Engineer, Center for Satellite Application on Ecology and Environment, MEE
- Ms. NI Biye, Senior Urban Planner, China Center for Urban Development, National Development and Reform Commission
- Ms. Rebecca Ray, Post-Doctoral Research Fellow, Global Development Policy Center, Boston University
- Ms. PENG Ning, Deputy Section Chief, Foreign Environmental Cooperation Center, MEE
- Ms. LI Panwen, Engineer, Foreign Environmental Cooperation Center, MEE

** 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	3
1. LINKAGES BETWEEN THE GREEN BELT AND ROAD AND THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT.....	4
1.1 Background and Progress of Building the Green Belt and Road Initiative.....	4
1.1.1 The Background, Goal and Achievement of the Belt and Road Initiative	4
1.1.2 Progress of the Development of the Green BRI	5
1.2 The Focus on SDG 15	6
1.3 Progress of Countries Along the Belt and Road in Implementing SDG 15	7
1.4 Benefits and Biodiversity-Related Risks of BRI.....	9
1.4.1 Benefits of the BRI	9
1.4.2 Biodiversity Risks and the BRI	10
1.5 The Need for Biodiversity Policy in the BRI	11
2. AN ANALYSIS OF RELEVANT POLICIES AND STANDARDS ON SDG 15	12
2.1 Research and Evaluation of China’s Experience.....	12
2.1.1 Biodiversity Conservation in China	12
2.1.2 Practices of Ecological Redlining in China	12
2.1.3 The Experience of China in Biodiversity Conservation through the Ecological Redline Policy (ERP)	13
2.2 Research and Evaluation from International Experience	15
2.2.1 Benefits of Developing Green Standards and Safeguards Across the BRI	16
2.2.2 Comparative Analysis of Biodiversity Policy for International Financial Institutions	20
2.3 Areas of Convergence and Divergence between China and International Peers	24
3. ANALYSIS OF SDG 15 RELATED INVESTMENTS POSSIBILITIES	25
3.1 Survey and Assessment of the Chinese Experience	26
3.2 Survey and Assessment of International Practices	30
3.3 The Applicability of Chinese Domestic Experience for Biodiversity Finance with International Peers.....	34
4. ANALYSIS OF SDG15-RELATED GOVERNANCE STRUCTURE	35
4.1 Survey and Assessment of Practices in China.....	35
4.1.1 Governance Structure	35
4.1.2 Green Belt and Road and Biodiversity Conservation	36
4.2 Survey and Assessment of International Practices	38
4.3 Areas of Convergence and Divergence between China and International Peers	41
5. POLICY RECOMMENDATION: CONSTRUCTION ROADMAP OF GREEN BELT AND ROAD	42



5.1 Roadmap for Building a Green BRI..... 42

5.1.1 Taking the green Belt and Road Initiative as an important practice of realizing Sustainable Development Goals and facilitating global environment governance reform..... 42

5.1.2 Establishing the mechanism for linking Green BRI with the 2030 Agenda for Sustainable Development..... 42

5.1.3 Establishing and improving the mechanism for project management on green Belt and Road..... 43

5.1.4 Jointly conducting green capacity building programs with BRI participating countries 44

5.2 Policy Instruments for Aligning the BRI with SDG 15 44

REFERENCES 47

ANNEXS 54

 Annex 1: Supporting Evidence for Chapter 1 54

 Annex 2: Supporting Evidence for Chapter 2 57

 Annex 3: Evidence from Chapter 3..... 62

 Annex 4: Evidence from Chapter 4..... 64



EXECUTIVE SUMMARY

The Belt and Road Initiative (BRI) promises to create new opportunities for shared growth among countries through policy coordination, connectivity, unimpeded trade, financial integration, and people-to-people connections. It takes on new and deeper relevance amidst the global pandemic that has stricken the world. The fight against COVID-19 pandemic has made it abundantly clear that the global community is inescapably interconnected and needs stronger international collaboration through shared institutions and economic growth paths that are resilient, inclusive, and sustainable. The BRI has the potential to make major contributions to these needs.

This Special Policy Study (SPS) is the second phase of the SPS on the theme of “Green Belt and Road and 2030 Agenda for Sustainable Development” under the auspices of the China Council on Environmental Cooperation and Development (CCICED). The first phase was implemented from 2018 to 2019 and provided broad principles, objectives and approaches towards the green development of Belt and Road. In 2021 (rescheduled from 2020 because of the pandemic) China will host the 15th meeting of the Conference of the Parties (COP 15) for the Convention on Biological Diversity (CBD). For this reason, this second phase examines the extent to which the BRI can also promote biodiversity conservation across the globe.

The BRI has significant potential to boost the incomes of BRI countries and the world at large. According to the World Bank, the BRI could increase trade in BRI countries by 9.7% and foreign direct investment (FDI) by 7.6%, which would lead to an increase in real income for Belt and Road economies by up to 3.4%. Increases of standards of living in the BRI countries also benefit the rest of the world, which according to the World Bank would grow by up to an additional 2.9% due to the BRI. These estimates stand in sharp contrast with similar estimates for the Trans-Pacific Partnership, which would have boosted the growth of its membership by just 1.1% and the rest of the world by 0.4% (Petri and Plummer, 2016).

Alongside the significant benefits associated with major infrastructure financing, large infrastructure finance is also endemic to a set of sustainability-related risks, including biodiversity risk, and the BRI is no exception. Several early studies in China and abroad have shown that a number of the biodiversity risks common to infrastructure investment may also become common for the BRI. These studies show that the BRI may become associated with losses in wildlife movement and mortality through habitat loss, the spread of invasive species, increases in illegal logging, poaching, and fires; and cause deforestation through the construction of roads, power lines and power plants, and subsequent mining activity. For these reasons, it is important to incorporate eco-environmental risk mitigation and management into the “green BRI” framework to align it with the 2030 Agenda for Sustainable Development.

Chinese President Xi Jinping exhibited China’s global commitment to biodiversity when he unveiled the Beijing Call for Biodiversity and Climate Change alongside French President Emmanuel Jean-Michel Frédéric Macron in late 2019. In the call, China and France pledge to lead by example to

“Mobilize additional resources from all sources, both public and private, at the domestic and at the international level, towards both climate adaptation and mitigation; make finance flows consistent with pathways towards 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.***” (China Daily, 2019, emphasis added).

With the aim of operationalizing these commitments, this SPS examines how both China and international institutions have learned over time to prevent and mitigate such risks. China’s Ecological Red Line standards and analogous international practices offer a number of models that can be



adapted to green the BRI with respect to biological diversity. The report includes further strategic principles for aligning the BRI with the Sustainable Development Goals (SDGs) and the Paris Agreement in general and establishing the green BRI Roadmap, i.e. China and the BRI participating are expected to mainstream green development through the “five connectivities” in building the Belt and Road, in order to jointly implement policies and measures for protecting eco-environmental and tackling climate change, as well as to support the international processes for environmental agreements such as CBD and the United Nations Framework Convention on Climate Change (UNFCCC). This strategy links three frameworks: the green BRI, the 2030 Agenda for Sustainable Development, and development goals of BRI participating countries. Specifically, this SPS recommends further enhancing environmental management at project level; establishing a BRI evaluation and management mechanism to properly consider the projects’ potential impacts related to environmental pollution, biodiversity conservation, and climate change; as well as greater use of green finance instruments for BRI-related projects.

Under the framework outlined by the above Roadmap for building a green BRI, with a special focus on Sustainable Development Goal 15 (SDG 15) and biodiversity conservation, more specific policy recommendations have been proposed to better align BRI, SDG 15, and CBD. This SPS recommends that China:

- (1) Improve assessment and classification oriented management of BRI projects to align the BRI with SDG 15 and the CBD;**
- (2) Mainstream biodiversity standards as an integral part in environmental impact assessment for BRI projects;**
- (3) Take ecological redlining as a key instrument to link the BRI and SDG 15;**
- (4) Adopt a mitigation hierarchy for those projects identified as having significant biodiversity risks as a result of strategic environmental assessment; and**
- (5) Establish a governance and financing structure for implementing and monitoring progress toward aligning the BRI with SDG 15, and creating synergies with efforts for SDG 13 of Climate Action.**

1. LINKAGES BETWEEN THE GREEN BELT AND ROAD AND THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

1.1 Background and Progress of Building the Green Belt and Road Initiative

1.1.1 The Background, Goal and Achievement of the Belt and Road Initiative

Since the financial crisis in 2008, the world has recognized the need to forge new sources and patterns of economic growth. In this context, the Belt and Road Initiative (BRI) was proposed as China’s contribution to a comprehensive solution for sustainable development. Pursuing the principles of extensive consultation, joint contribution and shared benefits, the BRI promises to create new opportunities for shared growth and prosperity among countries through policy coordination, connectivity, unimpeded trade, financial integration, and people-to-people connections. It takes on new and deeper relevance amidst the global pandemic that has stricken the world, as it has become acutely clear that major international efforts like the BRI can help bolster cooperation against pandemics and other international challenges like financial crises, climate change, and global biodiversity loss.

The accomplishments thus far have been impressive. From 2013 through 2019, cumulative commodity trade between China and countries along the Belt and Road, defined in the broadest terms, exceeded USD 7.8 trillion; direct investment to countries along the Belt and Road approximated USD



110 billion; and the value of new project contracts reached nearly USD 800 billion (Belt and Road Portal, 2020). As estimated by the World Bank (2019), implementing BRI projects will reduce the aggregate costs for trade among BRI participating economies by 3.5% and those for the trade between BRI participating economies with the rest of the world by 2.8%. By November 2019, the investment from Chinese enterprises in building economic and trade cooperation zones overseas in BRI countries amounted to USD 34 billion, creating tax revenue of over USD 3 billion and 320,000 local jobs (MOFCOM, 2020). According to the World Bank (2019), the implementation of the Belt and Road Initiative has the potential to raise real income gains in BRI countries by 3.4% and increase global real income by up to 2.9% for the rest of the world. The BRI has been recognized by the United Nations as a solution for facilitating the implementation of the 2030 Agenda for Sustainable Development.

However, the BRI has even greater potential, specifically in the area of supporting biodiversity through high-quality infrastructure investment and global coordination. In April 2019, research findings and recommendation reports from the Advisory Council of the Belt and Road Forum (BRF) for International Cooperation (2019) highlighted that the Belt and Road Initiative and UN 2030 Agenda for Sustainable Development shared common ground in terms of facilitating cooperation, implementation instruments and measures, among others, which could achieve greater synergy.

1.1.2 Progress of the Development of the Green BRI

Since its inception, building the Belt and Road into a pathway for green development has been the aspiration and expectation of the Chinese government as well as the shared goal of all participating countries. China has accelerated its progress in building an ecological civilization, making unprecedented efforts in recent decades. The concepts of “putting ecological progress in the first place” and “green development” have been widely accepted by Chinese society as a consensus, and economic growth is shifting from a conventional model of “development first and green later” to high-quality development led by ecological civilization. By jointly building a green BRI with participant countries, China is creating a platform for countries to share and learn from one another the experience of green transitions and sustainable development. Over the past six years, China has been working closely with BRI participating countries in areas of environmental governance, biodiversity conservation and climate change mitigation and adaptation via bilateral and regional cooperation. It has witnessed positive and concrete results in building a green BRI and implementing the 2030 Agenda for Sustainable Development.

First, China has improved the BRI’s top-level design and enhanced its cooperation mechanisms. In March 2015, the National Development and Reform Commission (NDRC), the Ministry of Foreign Affairs (MFA) and the Ministry of Commerce (MOFCOM) jointly issued their “Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road.” The document proposes that China should promote ecological progress in conducting investment and trade, increase cooperation in ecological conservation, biodiversity protection, and climate change mitigation and adaptation. In 2017, the Ministry of Ecology and Environment (MEE, then Ministry of Environmental Protection) issued the “Belt and Road Ecological and Environmental Cooperation Plan” and launched the “Guidance on Promoting Green Belt and Road,” which identified the roadmap for the development of a green BRI, together with the MFA, NDRC and MOFCOM.

As the BRI gradually unfolds, the green BRI framework is gaining a positive response from the international community. Currently, the MEE has signed nearly 50 bilateral and multilateral environmental cooperation agreements and has launched BRI International Green Development Coalition (BRIGC). The BRIGC was proposed by Chinese President Xi Jinping during the First Belt and Road Forum for International Cooperation (BRF), officially launched on the Thematic Forum of Green Silk Road of the Second BRF, and listed as one of the sectoral multilateral cooperation initiatives and platforms in the Joint Communique of the Leaders’ Roundtable of the Second BRF. The main goal of BRIGC is to promote international consensus, understanding, cooperation and concerted actions to achieve green development of the BRI. To date, more than 150 Chinese and



international organizations from over 40 countries have confirmed their partnership, including more than 70 overseas institutions such as government departments of BRI participating countries, international organizations, think tanks and businesses. Currently, BRIGC is actively promoting policy dialogues, thematic partnerships, and champion projects. The flagship research on BRI Green Development Report, the Joint Research on the “Green Development Guidance on BRI Projects”, and the joint study on BRI Green Development Case Studies have been launched.

Second, platforms and modes for cooperation have been enriched to be more pragmatic. China has expanded platforms for collaboration, including the China-Cambodia Environmental Cooperation Center and China-Laos Environmental Cooperation Office, which actively promote capacity building programs and champion projects. The Belt and Road Environmental Technology Exchange and Transfer Center (Shenzhen) was established to take advantage of the industrial resources of the area to promote innovative development and international transfer of environmental technologies. These platforms will facilitate environmental cooperation along the Belt and Road on regional and national levels. The BRI Environmental Big Data Platform (referred to as “the Big Data Platform”) was officially launched. It has developed its own application (APP) for information updates, which helps to improve the “One-Map” system for integrated data services. With the help of information technologies, such as “Internet +” and big data, the Big Data Platform is designed to be an open platform for the exchange of ecological and environmental information through sharing and collaboration. It will provide environmental data support to BRI participating countries, including ecological environmental protection concepts, laws, regulations and standards, environmental policies and management measures, etc.

Third, China has promoted in-depth policy communication to build consensus on green development. China has made full use of existing international and regional cooperation mechanisms to share its vision, experience, and achievements in ecological civilization and green development, through the UN Environment Assembly, CEEC Ministers’ Conference on Environmental Cooperation, and other international events. Meanwhile, the MEE is also engaged in opening up new channels for dialogue and communication. It held the Thematic Forum of Green Silk Road of the Second BRF for International Cooperation, organized sideline events on Green BRI during World Environment Day Celebrations, UN Climate Action Summit, and China-ASEAN Environmental Cooperation Forum, and sponsored more than 20 thematic forums each year on biodiversity conservation, climate change mitigation and adaptation, and eco-friendly cities with the attendance of more than 800 people from BRI participating countries and regions.

Fourth, these cooperation projects have borne fruit. For example, the Chinese government has established the Green Silk Road Envoys Program to promote capacity building in environmental governance in China and BRI participating countries. This program has trained more than 2,000 government officials, technological staff, youth, and scholars from 120 BRI participating countries. According to the List of Deliverables of the Second BRF, the Chinese government will continue to implement the Green Silk Road Envoys Program, which expects to train 1,500 environmental officials from the BRI participating countries in the next three years. The Chinese government has also worked with relevant countries to jointly implement the Belt and Road South-South Cooperation Initiative on Climate Change to improve the capacity of BRI participating countries in addressing climate change and promote the implementation of the Paris Agreement. Moreover, China is also engaged in helping BRI participating countries in climate change mitigation and adaptation and energy transition, and promoting Chinese environmental technologies, standards, and low-carbon and energy-saving products in the international market through building low-carbon demonstration zones and organizing capacity building activities based on the reality and demands of BRI participating countries.

1.2 The Focus on SDG 15

In May 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) released the Global Assessment Report on Biodiversity and Ecosystem Services. The report



evaluated the influence of biodiversity and ecosystem services on the economy, well-being, food security and life qualities. The report revealed that, over the past 50 years, the speed of biodiversity loss is unprecedented across human history. The top direct drivers for the most drastic biodiversity loss include changes in the use of land and sea, direct exploitation, climate change, and invasive alien species; while values and behaviors such as demographic and sociocultural changes, economic and technological factors, as well as institutions and governance are considered as critical indirect drivers for biodiversity loss. Overall, 75% of the terrestrial environment has been severely changed by human behavior and activities. The pressures brought by the above drivers made it difficult to attain the related goals set by the Convention on Biological Diversity (CBD) and the UN Framework Convention on Climate Change (UNFCCC), unless more revolutionary actions are taken. Similarly, to realize relevant goals and targets in the 2030 Agenda, revolutionary changes from the status quo protection speed and measures have to be implemented.

The year 2021 will mark an important turning point. The 15th meeting of the Conference of the Parties (COP 15) to the CBD will take place in Kunming, China in 2021, with the theme of “Ecological Civilization: Building a Shared Future for All Life on Earth.” COP 15 will review the Post-2020 Global Biodiversity Framework, set up 2030 objectives and targets for the conservation of global biodiversity, formulate the strategy for the conservation of global biodiversity in a new decade (2021-2030), and launch the new course of post-2020 global biodiversity conservation.

The 2030 Agenda has highlighted the significance of biodiversity, with SDG 14 “Conserve and sustainably use the oceans, seas and marine resources for sustainable development” to deal with marine biodiversity and SDG 15 “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss” to address issues with terrestrial biodiversity. In this sense, CBD COP 15 could be considered as a key window of opportunity to speed up the attainment of biodiversity-related SDGs.

Built on the results of the first phase of the Special Policy Study (SPS) on Green Belt and Road and 2030 Agenda for Sustainable Development, this SPS, as the second phase of the series, will take a goal-by-goal and step-by-step approach to the alignment of BRI and biodiversity-related SDGs. Given the severity of terrestrial ecosystem degradation and biodiversity loss, this SPS will primarily focus on SDG 15 as the entry point and propose policy recommendations for COP 15 on how to encourage BRI participating countries to better implement SDGs with the help of BRI. Similar approaches and measures can be replicated in aligning BRI to SDG 14 and other SDGs pertinent to biodiversity in the future.

1.3 Progress of Countries Along the Belt and Road in Implementing SDG 15

Progress is still lacking in achieving SDG 15 across BRI participating countries. The Sustainable Development Report 2019, published by the UN Sustainable Development Solutions Network (SDSN) and Bertelsmann Stiftung, evaluated progress among 193 countries in realizing SDG 13 (climate action), SDG 14 (life below water), and SDG 15 (life on land). It concludes that “trends on greenhouse gas emissions and, even more so, on threatened species are moving in the wrong direction.”

The SDSN assesses the progress of 139+1 countries along the Belt and Road (listed in Table 1-1, Annex 1) towards realizing SDGs. The report selects five indicators to evaluate the implementation of SDG 15, including the mean area that is protected in terrestrial sites important to biodiversity (%), the mean area that is protected in freshwater sites important to biodiversity (%), the Red List Index of species survival, permanent deforestation (5 years average annual %), and imported biodiversity threats (per million population).

SDSN finds particularly strong challenges in the geographic regions most closely associated with Belt and Road corridors: the Association of Southeast Asian Nations (ASEAN) as well as West and South Asian countries. These results are discussed below. The detailed evaluation results are shown in Figure 1-1 below, and Table A1-2 in Annex 1.

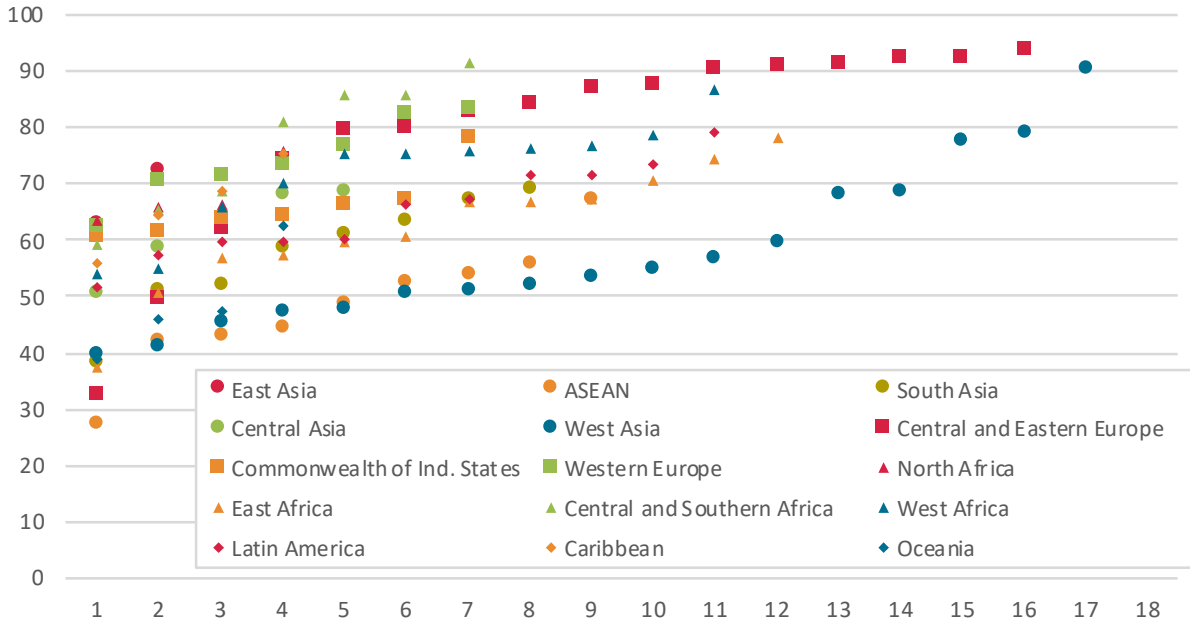


Figure 1-1. Score of Countries along the Belt and Road on SDG 15

Note: Circles indicate Asia, squares indicate Europe, triangles indicate Africa, and diamonds indicate other regions.

From the perspective of implementing SDG 15, SDSN finds that only four Central and Eastern European countries out of 140 countries have realized “Goal Achievement” of SDG 15: Poland, Hungary, Romania, and Bulgaria. The implementation of SDG 15 in Central and Eastern Europe is generally better than in other regions. For countries in other regions, there are various degrees of risks in the implementation of SDG 15. “Major Challenges” exist for three ASEAN Member States (Malaysia, Indonesia and Viet Nam), four in South and West Asia (Afghanistan, Iraq, Turkey, and Syria), four in East Africa (Djibouti, Madagascar, Seychelles, and Somalia) and four in Oceania (Fiji, Micronesia, the Solomon Islands, and Vanuatu).

Regarding the time sequence of implementing SDG 15, SDSN finds once again that Central Eastern European countries exhibit better performance than other regions. Ten out of 16 Central and Eastern European countries are on track or maintaining achievement, four countries show a moderately improving trend and two countries showed stagnation in their work. ASEAN Member States and countries in South Asia are the main areas facing challenges. The scores of SDG 15 in half of the 10 ASEAN Member States are decreasing, while two countries are in stagnation. Four countries out of eight in South Asia demonstrated a declining trend in implementation performance. Most countries in Central Asia and Commonwealth of Independence States (CIS) revealed stagnation in implementation, including five Central Asian countries and five out of seven CIS countries.

From the perspective of specific indicators, the most impactful indicator for ASEAN and South Asian countries in implementing SDG 15 is the Red List Index. Following a time sequence, the performance on this indicator in ASEAN and South Asian countries exhibited a decreasing trend. In addition, for ASEAN Member States, permanent deforestation also brings tremendous risks in implementing SDG 15. Specific results are listed in Annex 1.



1.4 Benefits and Biodiversity-Related Risks of BRI

The BRI has the potential to close major infrastructure gaps, accelerate regional integration, and increase economic growth in a manner that advances progress towards the SDGs. Indeed, there is certain evidence that after just a few years the BRI is contributing to the achievement of some of these goals. Any large-scale development effort also has potential risks, and the key to the BRI's success will be to maximize the potential benefits while minimizing the potential risks. One such risk is the biodiversity decline that is often associated with major infrastructure investments in ecologically fragile areas with insufficient risk assessment in advance or risk management in operation. When accentuated, biodiversity loss can even jeopardize the economic returns of infrastructure investments.

Chinese President Xi Jinping exhibited China's commitment to biodiversity when he unveiled the Beijing Call for Biodiversity and Climate Change alongside French President Emmanuel Jean-Michel François Macron in late 2019. In the call, China and France pledge to lead by example to

“Mobilize additional resources from all sources, both public and private, at the domestic and at the international level, towards both climate adaptation and mitigation; make finance flows consistent with pathways towards 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.***” (China Daily, 2019, emphasis added).

This SPS is intended to conduct evidence-based research in order to formulate a framework of policies that will help the BRI be compatible with SDG 15. This section outlines the potential and realized benefits of the BRI and the potential biodiversity loss risks associated with the BRI.

1.4.1 Benefits of the BRI

The world community faces a financing gap of 2.1% of global GDP annually to 2030 in order to provide the infrastructure that is needed to meet the SDGs (Bhattacharya et al., 2019). The China-led BRI has the potential to take a leading role in closing those gaps in a manner that is aligned with the SDGs. According to estimates from the World Bank (2019), the transport corridors of the BRI will significantly increase economic growth in BRI countries. New transport corridors can increase the speed and efficiency of trade routes, connect isolated human settlements, and create better access to markets by facilitating the transportation of goods, services, and people across the world. When infrastructure is completed, there are boundless possibilities for “spillover effects” where new forms of economic activity arise that would not have without the infrastructure investment (see Yoshino et al., 2016).

The BRI has significant potential to boost the incomes of BRI countries and the world at large. According to the World Bank, the BRI could increase trade in BRI countries by 9.7% and foreign direct investment (FDI) by 7.6%, which would lead to an increase in real income for Belt and Road economies by up to 3.4% and by up to an additional 2.9% for other countries. In contrast, estimates for the Trans-Pacific Partnership (TPP) show that TPP would have boosted the growth of its membership by just 1.1% and the rest of the world by 0.4% (Petri and Plummer, 2016). The BRI then may have the largest potential to boost economic prosperity among participant countries and across the world.

These benefits are already being realized. Dreher et al. (2017) looked at the impact of China's overseas projects financed by the China Development Bank, Export-Import Bank of China, and other Chinese financial institutions on economic growth in 138 countries. The authors found that on average a Chinese-financed project yields a 0.7% increase in economic growth two years after the project is committed.

1.4.2 Biodiversity Risks and the BRI

Alongside the significant benefits associated with major infrastructure financing, large infrastructure finance is endemic to a set of sustainability-related risks, including biodiversity risk, and the BRI is no exception. In a recent article in the journal *Nature Sustainability*, biodiversity experts noted that a number of the biodiversity risks that are common with respect to infrastructure investment may also become common for the BRI. The authors express concern that “the expansion of transportation networks will increase habitat loss, the overexploitation of resources and the degradation of surrounding landscapes.” (Ascens ão et al., 2018, 206) In particular, the authors noted that the BRI could trigger losses in wildlife movement and mortality through habitat loss, spread invasive species, increase in illegal logging, poaching, and fires; and cause deforestation through the construction of roads, power lines and power plants, and subsequent mining activity. The authors also note that “such impacts, which are already high in some regions, will degrade ecosystem services, possibly pushing some ecosystems beyond tipping points, where small negative changes can lead to abrupt changes in ecosystem quality and functionality” (Ascens ão et al., 2018, 206).

A handful of studies have already identified some of the potential biodiversity risks of the BRI. In a recent article in *Conservation Biology*, Hughes (2019) spatially located proposed road and rail projects of the BRI (defined as those along the BRI corridors) and examined the extent to which such projects will be proximate to Key Biological Diversity Areas (KBAs) across the world. The author estimates that 16% of the world’s KBAs are within 50 km of BRI proposed road projects and 60.6% of the world’s KBAs lie within the BRI’s proposed rail routes. The author also found that, 0.2% and 14.9% of KBAs are just 1 km from BRI road and rail routes respectively. In all, the author predicts that the BRI could endanger 4,138 animal and 7,371 plant species along the BRI (Hughes, 2019). A study published in *Current Biology* led by Xuan Liu (2019) from the Chinese Academy of Sciences looks at the potential for the BRI to accentuate invasive species. They find that BRI countries fall in 27 of 35 recognized global biodiversity hotspots across the world and that the proportion of areas of high invasive species potential in BRI covered regions is 1.6 times larger than in non-BRI regions.

The earliest study was conducted by the World Wildlife Fund for Nature (WWF). According to WWF’s analysis, BRI corridors in Eurasia overlap with the range of 265 threatened species including 39 critically endangered species and 81 endangered species, with 1,739 Important Bird Areas or KBAs and 46 biodiversity hotspots or Global 200 Ecoregions. WWF finds the potentially most impacted areas to be the China-Indochina Peninsula Economic Corridor, the Bangladesh-China-India-Myanmar Corridor, and the China-Mongolia-Russia Economic Corridor (WWF, 2017). A background study for the World Bank analysis discussed above came to similar conclusions. The China-Indochina Peninsula Economic Corridor and China-Mongolia-Russia Economic Corridor are facing the highest risks of biodiversity loss due to deforestation (Losos et al., 2019).

To appropriately address these risks, China’s development finance institutions, which provide the bulk of the lending necessary for BRI projects to move forward, can institute safeguards that work with BRI signatory countries to screen, assess, and oversee the operation to ensure best practices. A 2020 study in *Nature Sustainability* evaluated policies in financiers associated with the BRI: 35 Chinese and 30 international institutions. The authors find that only 17 of these lenders require biodiversity impact mitigation, and only one of those is Chinese: the China-ASEAN Investment Cooperation Fund (Narain et al., 2020). As a result, China faces potentially severe challenges in establishing cooperative mechanisms to oversee and mitigate biodiversity risks associated with specific BRI projects. This SPS explores lender safeguards and biodiversity risk mitigation in more detail below, in order to explore the potential for advancement in these areas.

Biodiversity loss also reduces economic well-being. A study published in the journal *Global Environmental Change* found that between 1997 and 2011, the world economy lost between USD 4 trillion and USD 20 trillion per year in ecosystem services from land cover changes (Costanza et al., 2014). A 2019 World Bank study examining the economic impact of conservation efforts in Kenya



shows that biodiversity management can make the difference between infrastructure projects having positive or negative economic impacts, because of impacts on ecosystem services for surrounding communities (Damania et al., 2019).

Risks to biodiversity clearly carry potential impacts for human communities, but those impacts can manifest differently across gender lines, which can severely curtail the effectiveness of conservation planning if it is not taken into account. In many rural, poor settings, biodiversity loss impacts women to a greater extent than men, especially in communities where women are tasked with collecting water, firewood, and wild foods, which is common in developing countries globally (Global Environment Facility, 2013; Rocheleau, 1995). If forests and riverine ecosystems are damaged, their tasks become more onerous, requiring farther travel in often insecure areas.

In addition to damaging women's living standards, these gender-based impacts of biodiversity loss can have a compounding effect on the biodiversity loss itself by curtailing women's ability to fulfill their traditional role as local biodiversity stewards. In many rural areas around the world, women protect agro-biodiversity for their communities through the maintenance of household or communal gardens, while men are tasked with paid labor in agribusiness monocrop production (Rimarach ñ Cabrera, Zapata Martelo, and V ázquez Garc á, 2001). In these communities, survival depends on both types of labor. During droughts, floods, or other natural disasters, the resilience of heirloom food crop varieties becomes especially important. These gardens are also more dependent on soil and water health, as chemical inputs are costly.

Thus, biodiversity conservation supports gender parity, which in turn further supports conservation. Development projects can support a virtuous cycle, or alternately, can initiate a descent into a vicious cycle in which forest and river biodiversity loss is compounded by their impacts on women, the traditional caretakers of crop biodiversity.

These same impacts can be seen in poorly designed conservation projects, in which women are unable to access the forests and waterways they traditionally visit for their sustainable gathering work (World Bank, 2009). Even though project planners may hope that their efforts preserve biodiversity, by not taking into account the gender-based impacts of their programs, they may limit the biodiversity benefits, as women must shift their time from managing crop biodiversity to traveling greater distances for gathering basic household needs.

Unfortunately, these gender-based risks to biodiversity management can be difficult for planners to detect if they are not specifically looking for them. As Lu et al. (2018) point out, in contexts where women do not customarily participate in public discussions, the impact they face from development proposals may go undetected. In these settings, even projects that rely on community participation will miss input from women if they are not specifically prioritized, leaving planners and funders vulnerable to the risk of biodiversity loss (Agarwal, 2001; Cornwall, 2003; Moser, 1993).

If the BRI does not develop and institutionalize a strategic set of appropriate policies and standards to mitigate the biodiversity risks, it could encounter financial, social, environmental, and political risks as well that may further erode the maximum potential of the BRI. Fragile ecosystems can jeopardize the integrity of infrastructure projects, reduce financial rates of return, and accentuate debt-driven macroeconomic stress in host governments and on the balance sheets of Chinese financiers. Furthermore, increased degradation of biodiversity can lead to social conflict and reputational risks that can also threaten the geo-political relationships that are so important to the BRI as well. For these reasons and more it is important to control biodiversity risks associated with the BRI.

1.5 The Need for Biodiversity Policy in the BRI



Concrete policies for biodiversity conservation will be key to maximizing the potential benefits of the BRI. With the aim of maximizing the benefits of the BRI, the rest of this SPS report surveys best practices across China and the globe with respect to project finance and biodiversity in order to draw lessons for a coherent set of policies that China could adopt for the BRI moving forward. Section 2 of the SPS report surveys and assesses policies and standards for biodiversity conservation in China and by international institutions. Section 3 examines different biodiversity finance (Biofin) policies in China and abroad. Section 4 surveys potential Chinese and international governance structures that may be appropriate for incorporating biodiversity into the BRI. Finally, Section 5 distills a set of policy recommendations that Chinese institutions could adopt to align the BRI with SDG 15.

2. AN ANALYSIS OF RELEVANT POLICIES AND STANDARDS ON SDG 15

2.1 Research and Evaluation of China's Experience

2.1.1 Biodiversity Conservation in China

China is among the world's megadiverse countries, yet its biodiversity is seriously threatened. To strengthen biodiversity conservation, China has been conducting biodiversity surveys, assessments of endangered categories of ecosystems and species and in-situ and ex-situ conservation, as well as developing policies and regulations on biodiversity conservation. Assessment of China's progress in implementing SDG 15 is displayed in Table A2-1 in Annex 2.

In terms of in-situ and ex-situ conservation, China has established a natural protected area system pivoting on national parks and also including nature reserves, scenic areas, forest parks, geographic parks, wetland parks, and cultural and natural heritage sites, among others. To supplement the natural protected areas, China has also established key ecological function zones and priority areas for biodiversity conservation. Currently, China has more than 10,000 protected areas, including national parks, nature reserves, forest parks, scenic areas, geographic parks, wetland parks, drinking water sources, and so on, covering 18% of the national land territory. At the same time, China has proposed an ecological function zoning scheme that consists of large-scale ecological function zones of different levels (including national key ecological function zones, important ecological function zones, bio-sensitive zones and vulnerable zones), which has played a significant role in protecting biodiversity and safeguarding national ecological security. However, even with these measures in place, China has still witnessed severe ecosystem degradation and accelerated biodiversity loss due to a lack of clear identification of natural protected areas' boundaries. The drawing of ecological redlines could identify areas with unique ecological functions, which must be strictly protected in order to realize centralized management of the eco-space.

2.1.2 Practices of Ecological Redlining in China

(1) The Drawing and Management of Ecological Redlines

In October 2011, the State Council of China released the "Opinions on Strengthening Major Environmental Protection Work" to put forward ecological redlining for the first time. The document articulates the drawing of ecological redlines in major ecological function areas, sensitive areas and vulnerable areas for permanent conservation. In February 2017, the General Office of the CPC Central Committee and the General Office of the State Council jointly issued and circulated "Opinions on Drawing and Strictly Following Ecological Redlines," which established the framework, basic principles and overall goal of delineating and observing the ecological redlines. The release of this document represented a new phase of accelerated development of the ecological redline system in China.



(2) The Development of Scientific Methodology for the Drawing of Ecological Redlines

Scientific assessment is necessary before drawing ecological redlines. The aim of this step is to identify the spatial distribution of areas with critical ecological functions (such as water conservation, biodiversity protection, and water and soil preservation) and areas sensitive or vulnerable to water loss and soil erosion, desertification and salinization. The next step is to conduct a spatial mapping analysis of the two categories of areas and draw a redline for ecological protection that encompasses all development-prohibited areas at national and provincial levels and other protected areas in need of strict protection.

The design of ecological redlines aims to bring almost all rare and endangered species in China and their habitats under protection, with due consideration to China's own reality. Ecological redlining doesn't equal identifying new protected areas, but rather, constructing and optimizing the systems for ecological protection with a more scientific, comprehensive and systematic approach. It could turn existing protected areas into an integrated ecological protection system that is easy to manage. It contains both established protected areas of all kinds and areas that lack protection.

(3) The Establishment of the System for Delineating and Observing Ecological Redlines

In drawing the ecological redlines, the national government develops technical guidelines for provincial governments to decide the areas to be covered autonomously. Based on the "Methods for the Management of Ecological Redlines" issued by the Central Government, provincial governments develop their own methods with reference to local reality with detailed regulations on environmental access, the sustainable utilization of resources, ecological conservation and restoration, compensation for ecological protection and assessment and evaluation. Governments of all levels should take the responsibility of managing and regulating the ecological redlines.

(4) Significant effects have been achieved

In January 2018, the State Council approved the redline drawing plans from 15 provinces (autonomous regions and municipalities), including Beijing, Tianjin, Hebei, provinces and municipalities in the Yangtze River Economic Belt, and Ningxia. All these plans have been promulgated and implemented. In October 2018, the MEE and the Ministry of Natural Resources of China organized review meetings, principally approving the plans of drawing ecological redlines in 16 other provinces (autonomous regions and municipalities). The areas and sites covered by ecological redlines should be specified and demarcated after surveys. Still, based on the drawing plan, the ecological redline areas nationwide account for one-third of the national territory. Major ecological land within the redline boundaries, including forests, grasslands, and wetlands, accounts for 55% of the major ecological land nationwide. The natural protected area system pivoting on national parks has covered more than 18% of China's national land territory, surpassing the ratio of 17% set out by the 2020 Aichi Biodiversity Targets. The wild population of certain rare and endangered species such as the giant panda, crested ibis, and Tibetan antelope, has steadily increased. The major ecological land protected by the redlines covers the catchment areas of the Yangtze River, the Yellow River, and the Pearl River, among other major rivers at and above Category III in China, as well as all biodiversity-rich areas identified at the national level and the vast majority of biodiversity-rich areas defined at provincial levels. Redlining has also protected most river and lake water sources as well as some underground water sources, all the distribution areas of species on the List of Wildlife under Special State Protection, as well as the areas where protected fauna and flora are mostly distributed.

2.1.3 The Experience of China in Biodiversity Conservation through the Ecological Redline Policy (ERP)

Ecological redlines help with biodiversity conservation through bringing areas with rich biodiversity and of importance under protection. In this way, habitats within the ecological redline can be preserved and restored, and in-situ and ex-situ biodiversity conservation can be realized.



(1) The drawing of ecological redlines should be scientific and rational

An integrated and systematic approach should be taken to drawing ecological redlines. Scientific assessment is needed for the identification of different areas based on the importance of ecological functions and the sensitivity and vulnerability of eco-environment. Areas within the ecological redline include all development prohibited areas on the national and provincial levels and other protected areas where strict protection is necessary.

(2) Human activities should be strictly controlled in areas protected by ecological redlines

In terms of functional positioning, ecological redlines are of great significance to maintaining ecological equilibrium and supporting sustainable economic and social development. Areas within ecological redlines are land with critical ecological functions, the use of which must be strictly controlled. In terms of conservation, ecological redlines represent the critical point and baseline for safeguarding ecological security. Areas within ecological redlines should never be allowed to see degradation in their function, shrinking in their size or change in their nature. In principle, ecological redlines should be managed the same way as “development prohibited” areas, with all development activities not in line with the function positioning of the areas being strictly prohibited.

A. The management of protected areas, including national parks, nature reserves, scenic areas, forest parks, geographic parks, world natural heritage sites, wetland parks, and drinking water sources, should follow related laws and regulations.

B. For other areas within ecological redlines, the following human activities are prohibited: mining activities; land reclamation, sand quarrying and other activities that may destroy coastlines; large scale agricultural activities, including wasteland reclamation, animal husbandry of scale and fishing; textile, printing and dyeing, leather manufacturing, paper-making and other manufacturing activities; real estate development; the construction of passenger and freight stations, ports and airports; coal-fired power and nuclear power generation and hazardous articles warehousing; the production of products with heavy pollution and high environmental risks listed in the Comprehensive Directory of Environmental Protection (2017), and production and operation activities with high environmental risks identified by Measures for the Administration of Compulsory Liability Insurance for Environmental Pollution.

(3) Ecological restoration and ecological compensation should be conducted in areas protected by ecological redlines

A. Conducting ecological restoration

China will soon develop plans for ecological conservation and restoration within ecological redlines that prioritize the protection of sound ecosystems and major habitats, restore damaged ecosystems, establish ecological corridors and sites, and improve the integrity and connectivity of ecosystems. Ecological restoration in areas protected by ecological redlines is identified as an important component in the protection and restoration of ecosystems, including mountains, waters, forests, lakes, and grasslands. The government is determined to effectively provide financial resources for ecological conservation and restoration by coordinating funding channels for various conservation and restoration projects within ecological redlines, such as programs on water and soil conservation, natural forest conservation, and comprehensive improvement of land and resources. Ecological restoration within marine ecological redlines will be conducted, based on the principle of integrated governance of the land and the sea, with special emphasis on the comprehensive management of estuaries, littoral zones, islands and polluted waters.

B. Introducing an ecological compensation mechanism integrating government funding and funding from other sources



Governments of all levels should increase their funding for areas protected by ecological redlines. Local governments are encouraged to launch fiscal, credit, financial, and tax policies to facilitate the implementation of ecological redline policies and establish ecological compensation mechanisms.

Local governments should develop diversified investment and financing mechanisms guided by the government with extensive public engagement to pool in resources from all sides. Governments are also encouraged to launch pilot programs on payment for ecosystem services and develop market-based mechanisms to realize the value of ecological products.

(4) Integrated monitoring should be developed and continuously improved for ecological redlines

It is important to access real-time statistics, improve the capability of the integrated analysis and application of monitoring data, be informed of the composition, distribution and dynamic change of ecosystems protected by ecological redlines, and keep track of human interference. Administrative decisions should be made in a scientific way with illegal acts being checked and handled in time.

(5) An accountability system should be established for safeguarding ecological redlines

A. Strengthening supervision for law enforcement

With the establishment of enforcement mechanisms for ecological redlining, regular supervision and inspection of law enforcement should be conducted to identify and punish illegal acts damaging ecological redlines. Should any violation appear, it should be investigated.

B. Establishing an assessment mechanism

Assessment of the performance of local governments in implementing ecological redlines should be conducted. The results of the assessment shall be a reference in determining the political achievements of local governments.

C. Strengthening the accountability system

Government officials whose decisions/actions cause severe damage to the ecological environment and resources shall be held accountable in all cases, regardless of their current positions.

D. Launching an incentive mechanism

Rewards should be given to organizations and individuals that have outstanding performance in protecting ecological redlines. It is recommended that personnel be assigned for the promotion of ecological redlines to improve the engagement of local residents.

E. Improving information transparency and public engagement

Governments should release information concerning ecological redlines, including their distribution and adjustment, to safeguard people's right to know, participate and supervise, and give full play to the role of the media, non-governmental organizations (NGOs) and volunteers in promoting ecological redlines.

2.2 Research and Evaluation from International Experience

Adopting a set of harmonized standards for SDG 15 across the BRI can help minimize the risk and maximize the benefits and legitimacy of all actors involved, through bolstering environmental and



social risk management (ESRM). This section reviews the international standards related to SDG 15 as practiced by the major multilateral financiers of infrastructure, integration, and development finance across the world, in two sections. First is a short note about the benefits of putting standards in place. Second is a comparative analysis of some of the major policies practiced by international actors.

Over the last few decades, environmental assessment and oversight systems have proliferated in the realm of international finance and investment. This section identifies the international actors that serve as peers for the Chinese financial institutions most active in BRI project finance and provides a survey of common practices among them. BRI projects predominantly receive financing through Chinese official entities such as the Silk Road Fund, the China Development Bank, and the Export-Import Bank of China, though not exclusively so (Xi, 2017). Thus, the international equivalent for the sake of environmental governance of cross-border infrastructure development is the cohort of multilateral development finance institutions (DFIs) that have been traditional sources of support for BRI signatory countries.

2.2.1 Benefits of Developing Green Standards and Safeguards Across the BRI

Developing green standards can ensure that the BRI is calibrated to the SDGs while bringing benefits to virtually all of the stakeholders in the BRI. High-level or best-in-class environmental standards should thus take into account the preferences of Chinese and the other multitude of stakeholders engaged in the BRI to ensure that the BRI can provide public goods to the global economy as a whole.

Table 2-2: Benefits of Standardizing the SDGs in the BRI

Benefits of standards across the BRI	
Chinese actors	Expansion of markets
	Greater project effectiveness
	Prevention from default risk
	Prevention and mitigation of environmental and social risk
	Prevention and mitigation of reputational risk
Host countries	Improved management of fiscal resources
	Better management of natural resources
	Strengthening of institutional capacities
	Prevention and mitigation of environmental and social risk
	Prevention and management of reputational risk
Local communities	Reduced likelihood of social conflict
	Enhanced voice and ownership
	Reduced vulnerability
	Improved livelihoods
Global	Equitable use of resources
	Enhancement of global public goods
	Interconnectivity and global growth
	Leadership and legitimacy

Source: authors' adaptation base on World Bank (2010); China Development Bank-UNDP (2019)

Standards can also increase project performance and profitability of projects. For example, in 2018 the International Finance Corporation (IFC) found that establishing standards across each of the common norms noted above were correlated with strong financial performance (measured by return on assets and return on equity) and financial risk ratings in 656 IFC projects representing USD 37 billion (IFC, 2018). Risk instruments based on debt sustainability analysis (DSA) can help ensure that Chinese actors do not have to bear the risk of default on projects. While full assessments of the costs and benefits of ESRM are hard to quantify, the Independent Evaluation Group (IEG) of the World Bank (an independent monitoring group) conducted an assessment of the costs and benefits of ESRM in 2010 and concluded that benefits from the “environmental safeguards far outweigh the incremental costs” (World Bank, 2010, 78). Weighing risks and benefits from a sample of bank projects, the World Bank found that most sensitive projects yielded “low cost – low benefits or high cost – high benefits for recipient countries.” In the same IEG survey mentioned above, the World Bank also found that over half of the “task team leaders surveyed reported that the Bank’s safeguards increased acceptability of the project among beneficiaries, and the safeguard policies also increased acceptability among nearly 30% of co-financiers” (World Bank, 2010, 47).

**Box 1. Case study: Incorporating ESRM into Chinese Mining Enterprises in Peru**

Chinese financiers, firms, and the government can benefit substantially from establishing a set of harmonized standards around these common norms. First, these tools can help Chinese banks and firms expand and maintain market share overseas. China's experience in Peru is a case in point. Because of a lack of ESRM on the part of Chinese investors and the Peruvian government, China's first foray into Peru was a costly one. Chinese firms struggled to work with workers and local communities over worker health and safety, emergency preparedness, and biodiversity concerns. Though some of the issues were actually due to a lack of enforcement of host country systems rather than the Chinese firm, Chinese firms in general suffered reputational damage. Indeed, it became more difficult for Chinese firms to win contracts for mining and exploration in that country because of the perception that Chinese firms and financiers did not have proper risk management strategies. Later, Chinese copper firms devised significant ESRMs and participated in stakeholder consultations during the design stage. Such activity helped get market access and enhance China's reputation rather than worsen it. Indeed, when an accident did occur, ESRM plans allowed the company and host country to respond in such a way as to mitigate the worst damage (Irwin and Gallagher, 2013; Ray et al, 2016).

Standards can also benefit local communities close to projects. Engaging with local laborers and communities about a project beforehand can help identify concerns before they turn into conflicts. In Bolivia, Chinese tin companies took part in a prior informed consent engagement with local communities that rejected the location of the tin company. Bolivia found another community more suited and equipped for the project, likely deferring social conflicts that would have hurt the companies' business prospects and damaging China's reputation in general (Ray et al., 2016).

Box 2. Beyond DFIs: Environmental Governance Systems in the United Nations

Through United Nations mechanisms, nations have developed parallel systems to the systems of governance established by the DFIs profiled here. In this context, the CBD has long been a global platform for efforts to raise and harmonize national standards. CBD guidance is highly compatible with the “green BRI” framework, in that it encourages countries to collaborate in information sharing and capacity building to develop their own standards and practices (CBD 1992, Article 14).

In 2006, the CBD established voluntary guidelines for biodiversity-inclusive environmental impact assessment, including substantial upstream attention to identifying potential areas of concern. The guidelines encourage parties to focus upstream effort – before projects are proposed – in developing biodiversity mapping resources, such as the ones developed in China’s recent history of demarcation of conservation priority areas. Individual project proposals can then be screened to ensure that all likely risks will be adequately addressed in the assessment stage. Impact assessments should be conducted with full participation by all stakeholders, to the extent possible. After individual projects’ impact assessment, accountability mechanisms should be established to monitor and manage those projects’ risks, and oversee any necessary mitigation (CBD, 2006). CBD has also called for harmonization of standards among biodiversity financing mechanisms. Includes standards to apply in all cases, including but not limited to: highlighting and prioritizing the intrinsic value of biodiversity and its role in local livelihoods, effective public participation by project stakeholders, the establishment of institutional frameworks to oversee safeguard implementation (CBD, 2018).

The Global Environment Facility (GEF) has been another important source of guidance on environmental standards. The GEF does not finance projects independently but rather works through co-financing. As such, its standards can “crowd in” other lenders and enable a broader reach. The GEF has nine minimum standards for projects, including assessment, accountability mechanisms, conservation practices, and restrictions on land use and the involuntary resettlement of existing communities. The first minimum standard, on environmental and social assessment, management, and monitoring, echoes CBD guidance in its requirement for project screening as early as possible to establish which risks – among those covered by this standard as well as the remaining eight – may apply to each project. The second standard requires the establishment of institutional mechanisms such as those described below, to address problems that may arise in an accountable and transparent fashion. While the scope of these safeguards represents a crucial element in the environmental management of international development finance, its scale is modest. GEF’s current 4-year work cycle draws on \$4.1 billion in pledged funding (GEF, 2018). That represents a tiny fraction of the development finance issued through major development finance institutions. For comparison, the World Bank has approved over \$120 billion in projects over the last four years (World Bank, 2020). For this reason, the international section of this paper focuses on the largest DFIs, which are the traditional sources of infrastructure finance in developing countries, as a comparison point for BRI projects.

Box 3. Beyond DFIs: Environmental Governance Systems in the Private Sector

In addition to the multilateral approaches profiled in this chapter, systems for private investment and finance have also made significant advances in recent years. Perhaps best-known are the Equator Principles, for use by private financial institutions in evaluating proposals for support. These begin with an emphasis on early review and categorization of projects, to ensure that project-level assessments adequately address all of the salient environmental and social risks, in a way that ensures the broadest possible public participation. They also include the importance of well-designed institutional accountability mechanisms, which work in conjunction with national judiciary remedies to ensure appropriate project management in practice (Equator Principles, 2020). Complementary to the Equator Principles are the International Organization of Standards' environmental management tools, collected under the title ISO-14000. These systems do not specify specific safeguards but cover the extent to which institutions have established their own standards, with a commitment to employee training and auditing to ensure compliance.

While these frameworks can be important tools for private lenders and investors to better select and manage projects, they are not strictly analogous to projects financed under the BRI, which involve cooperation among national governments. Thus, this section focuses on common practices among development finance institutions, which have traditionally represented the bulk of infrastructure finance for developing countries.

2.2.2 Comparative Analysis of Biodiversity Policy for International Financial Institutions

This section of the report surveys the practices of eleven major international institutions financing infrastructure across the world with respect to biodiversity. What immediately emerges from such an analysis is a remarkable convergence with respect to the objectives and guiding principles across these institutions. Virtually all institutions seek to minimize the risks to biodiversity and aim to have “no net loss” or even a “net gain” in biodiversity. Moreover, most institutions also require biodiversity assessments tied to mitigation measures, and entail stakeholder engagement and consultation in the assessment and management of biodiversity. A detailed analysis of specific operations and policies also shows that there are major similarities across institutions as well.

The majority of the international financial institutions have established the goal of biodiversity as a core of their activities. The Asian Infrastructure Investment Bank (AIIB), the Development Bank of Latin America (CAF), as well as the World Bank (WB) and International Finance Corporation (IFC) all recognize the need to “integrate conservation needs and development priorities; through sustainable use of the multiple economic, social and cultural values of biodiversity and natural resources in an optimized manner.” To measure and calibrate such goals, institutions range from a policy of “no net loss” of biodiversity (such as the AIIB) or alternatively “no net loss or a net gain in biodiversity” (such as the European Investment Bank, EIB, Asian Development Bank (ADB), German Development Bank, and the CAF).

The majority of the international financial institutions also converge significantly with respect to overarching principles and policy operations for biodiversity protection. Virtually all of the institutions require these five traits:

- Alignment with international commitments and national legal requirements;
- Exclusionary lists of categorically ineligible projects due to biodiversity.
- Requirements for biodiversity screening and impact assessments;
- Application of a subsequent “mitigation hierarchy” for no net loss or a net gain to biodiversity; and
- Meaningful stakeholder engagement and consultation in the assessment and management of biodiversity.

These policies are exhibited in Table 2-3 and Table A2-4 (in Annex 2). In Table 2-3, international institutions are listed vertically and specific biodiversity measures are listed horizontally across the table. It should be noted however that while these institutions have these policies, they are not always executed, which can thus lead to negative outcomes for projects, biodiversity, and communities alike (Ray et al., 2019).

Table 2-3. Operational Requirements for Biodiversity Safeguards Applied by DFIs

International Best Practice for Biodiversity Conservation					
	Alignment with International and National Commitments	Exclusionary list of categorically ineligible projects	Biodiversity Impact Assessments	Adopt Mitigation Hierarchy	Stakeholder engagement and consultation
ADB	X	X	X		X
AfDB	X	X	X	X	X
AIIB	X	X	X	X	X
BNCDES	X		X	X	
CAF	X	X	X		X
EBRD	X	X	X	X	X
EIB	X	X	X	X	X
IADB	X	X	X	X	X
IFC	X	X	X	X	X
KfW	X	X	X		X
WB	X	X	X	X	X

Source: Authors' analysis of official documents and interviews. Note: ADB: Asian Development Bank; AfDB: African Development Bank; AIIB: Asian Infrastructure Investment Bank; BNCDES: Brazilian Development Bank; CAF: Development Bank of Latin America; EBRD: European Bank for Reconstruction and Development; EIB: European Investment Bank; IADB: Inter-American Development Bank; IFC: International Finance Corporation; KfW: German Development Bank; WB: World Bank.

Table 2-3 shows that there is a great deal of practice with respect to biodiversity across the largest international development finance institutions in the world economy. For the purposes of clarity, we identified five core areas of commonality listed above in the following: alignment with international commitments and national legal requirements; requirements for screening and assessments with specific biodiversity measures (and their related social impacts) that are fully disclosed; application of a subsequent "mitigation hierarchy" for no net loss or a net gain to biodiversity; entail stakeholder engagement and consultation in the assessment and management of biodiversity; and have an exclusionary list of categorically ineligible projects. This section of the paper highlights some of those programs.

(1) Alignment with international commitments and national legal requirements

A common trait across all of the international institutions is to align the practices of the institution with specific global or national commitments and legal requirements. Most of the institutions surveyed have language such as the following from the AIIB: "The Bank will not knowingly finance Projects involving the following....The production of, or trade in, any product or activity deemed illegal under national laws or regulations of the country in which the Project is located, or international conventions and agreements, or subject to international phase out or bans" (AIIB, 2019). The AIIB and others then provide an illustrative list of the kinds of international and national commitments they mean to adhere to (discussed below in "Exclusionary lists").

(2) Exclusionary lists of categorically ineligible projects due to biodiversity



Often linked to the alignment language, the AIIB and others then provide an illustrative list of the kinds of international and national commitments they mean to adhere to. In the case of the AIIB they list the following (AIIB, 2019, 49 – 51):

- “Trade in wildlife or production of, or trade in, wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),”
- “Activities prohibited by legislation of the country in which the Project is located or by international conventions relating to the protection of biodiversity resources or cultural resources, such as, Bonn Convention, Ramsar Convention, World Heritage Convention and Convention on Biological Diversity.”
- Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests.
- Production or trade in wood or other forestry products other than from sustainably managed forests.”
- “Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.”

Most of the international institutions in the survey extend the possibility of excluding a project beyond these international and national commitments to cases where screening and environmental impact assessments may warrant it. Most have similar language on this matter. The African Development Bank’s policy reads that “If the Bank finds that the environmental or social impacts of any of its investments are not likely to be adequately addressed, the Bank may choose not to proceed with the investment.... When the habitat/biodiversity implications of a project would appear to be particularly severe, the Bank may decide not to finance the project” (AFD, 2013).

(3) Requirements for biodiversity screening and impact assessments

All of the major international institutions surveyed also perform analyses of biodiversity impacts as part of broader environmental impact assessments. With respect to biodiversity, these policies charge the institution to consider the direct, indirect and cumulative project-related impacts on the habitats and the biodiversity they support. The World Bank considers threats to biodiversity, for example habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. The World Bank also determines the significance of biodiversity or habitats based on their vulnerability and irreplaceability at the global, regional or national levels and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties (WB, 2018). Similar or identical language is found in the policies of most of the institutions studied here (see Table 2-3).

The CAF is one institution with a slightly different language and scope. Its policy states that it will examine “Relevant physical, biological, and socioeconomic conditions within the study area, In particular, environment-related aspects likely to be significantly affected by the proposed development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between factors above. Current and proposed development activities within the project’s area of influence, including those not directly connected to the project”. (CAF, 2015).

The Inter-American Development Bank (IADB) operates in such biodiverse places such as the Amazon basin which is home to many nations. The IADB’s policy also addresses transboundary biodiversity issues associated with a project. The environmental assessment process for the IADB seeks to identify, early in the project cycle, transboundary issues associated with the operation. The environmental assessment process for operations with potentially significant transboundary



environmental and associated social impacts, such as operations affecting another country's use of waterways, watersheds, coastal marine resources, biological corridors, regional air sheds, and aquifers, will address the following issues: (i) notification to the affected country or countries of the critical transboundary impacts; (ii) implementation of an appropriate framework for consultation of affected parties; and (iii) appropriate environmental mitigation and/or monitoring measures, to the bank's satisfaction.

In addition to estimating biodiversity impacts, international bodies recommend that economic impacts be differentiated on a gender basis, in order to estimate the indirect impact on women's work as stewards of crop biodiversity. The CBD's 2015-2020 Gender Action Plan calls for calculating project costs and benefits should be estimated differently for women and men, rather than collectively, as do the Green Climate Fund and Climate Investment Funds (CBD, 2017; CIF, 2016; Green Climate Fund, 2017).

(4) Adopting a mitigation hierarchy to address identified concerns

To the extent that the compulsory biodiversity impact assessments identify issues that may impact biodiversity, Table 2-3 shows that most of the major international financial institutions (eight of the 11 surveyed) require a "mitigation hierarchy" to meet the overall objective of "no net loss" or a "net gain" in biodiversity. The mitigation hierarchy has the following four pillars:

- **Avoidance:** measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity.
- **Minimization:** measures taken to reduce the duration, intensity and/or extent of impacts (including direct, indirect and cumulative impacts, as appropriate) that cannot be completely avoided, as far as is practically feasible.
- **Rehabilitation/restoration:** measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and/or minimized.
- **Compensation:** measures, such as offsets, taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimized and/or rehabilitated or restored, in order to achieve no net loss or a net gain of biodiversity. Offsets can take the form of positive management interventions such as restoration of degraded habitat, arrested degradation or averted risk, protecting areas where there is imminent or projected loss of biodiversity.

(5) Stakeholder engagement, consultation and disclosure:

All of the institutions surveyed for this SPS require stakeholder engagement and consultation in the assessment and management of biodiversity. Each of the institutions makes some commitment to carry out consultations with affected peoples and communities and seek their informed participation throughout the project cycle.

As noted earlier, the CAF is perhaps the most engaged in major infrastructure projects in areas where there are significant concerns about biodiversity in areas that inhabit large and often vulnerable populations. The CAF requires that consultations with project-affected groups be held early in the environmental impact assessment process and maintained throughout the project cycle. Throughout the project cycle important information is supposed to be disclosed in a timely manner to affected groups, civil society organizations, and other key stakeholders. The CAF also requires that "The potential impact of projects over forests and natural habitats, and the rights of access to and use of resources for the welfare of the communities shall be evaluated as a part to the Environmental and Social Assessment" (CAF, 2015, 64).



The IFC requires that borrowers go so far as implementing a *Stakeholder Engagement Plan*. Where applicable, the Stakeholder Engagement Plan will include differentiated measures to allow the effective participation of those identified as disadvantaged or vulnerable. When the stakeholder engagement process depends substantially on community representatives, the client is required to make every reasonable effort to verify that such persons do in fact represent the views of affected communities and that they can be relied upon to faithfully communicate the results of consultations to their constituents. When affected communities are subject to identified risks and adverse impacts from a project, the client will undertake a process of consultation in a manner that provides the affected communities with opportunities to express their views on project risks, impacts and mitigation measures, and allows the client to consider and respond to them (IFC, 2012).

Development finance institutions have learned the importance of ensuring that their stakeholder engagement plans incorporate the voices of women, particularly in cases where communities may be facing displacement. As mentioned in section 1.4.2 above, in many rural, poor settings around the world women do not customarily take part in public discussions but do bear the brunt of biodiversity losses, which can curtail their ability to serve as stewards of crop biodiversity, further potential biodiversity losses, and limit the benefits of conservation projects. For example, an inter-bank working group with representatives from the AIIB, ADB, AfDB, EBRD, EIB, IADB, NDB and the World Bank recently published joint recommendations on meaningful stakeholder engagement, which encourage project planners to ensure that these processes are designed specifically to prioritize the participation of women and other disadvantaged groups, and if necessary, disaggregate stakeholder engagement processes by gender (Kvam, 2019).

2.3 Areas of Convergence and Divergence between China and International Peers

China has made significant progress toward biodiversity-related SDGs, including SDG 15. China's Sixth National Report on implementing SDG 15 shows satisfactory progress in most areas, including several that are highly relevant to the BRI: integrating biodiversity into national and local planning, mobilizing and increasing biodiversity finance, and conservation of inland freshwater, forest, and mountain ecosystems. In these three areas, significant synergies exist between China's areas of growth and those of its peers, and these areas of overlap can be fertile ground for increased cooperation in the context of the BRI.

One of the most important mechanisms China has used to accomplish its domestic progress has been through the use of the Ecological Conservation Red Line (ECRL) system, protecting ecologically fragile regions and those that provide crucial ecological services. With a framework established in early 2017 by the General Office of the CPC Central Committee and the General Office of State Council, ecological red lines have quickly been developed nationally. In 2018 the State Council of China approved the red line plans from 15 provinces (autonomous regions and municipalities), including Beijing, Tianjin, Hebei, Ningxia, and the provinces and municipalities of the Yangtze River Economic Belt. By the end of 2020, the remaining national territory should be included in the red line system. The total protected land is expected to reach roughly-one third of the entire landmass of China.

Internationally, biodiversity conservation progress has centered around the establishment and mainstreaming of global standards that establish not only geographic limits, but also operational risk management strategies to protect local ecosystems, institutional reputations, and the cooperative relationships of all the partners involved in projects. Major international development finance institutions – including both multilateral and national development banks – use five main approaches to operationalizing international standards: (1) aligning institutional practices with international or national commitments, (2) using exclusionary lists of categorically ineligible projects, (3) requiring projects to undergo biodiversity impact assessments, (4) adopting a mitigation hierarchy to do no harm and, if possible, benefit local ecosystems, and (5) incorporate local stakeholders.



These approaches need not involve development lenders dictating terms to borrowing countries or single-handedly managing projects. Instead, they can induce international collaboration toward shared goals, built on information sharing from multiple nations' experience and accumulated expertise. For example, international bodies have developed platforms that can aid in cooperative approaches to the application of the mitigation hierarchy. The Restoration Opportunities Assessment Methodology (ROAM), developed by the IUCN and WRI is one such mechanism. ROAM supports national governments' development of ecosystem restoration programs, including the identification of priority areas, cost/benefit analyses for intervention approaches, and financing options (IUCN and WRI, 2014). In this regard, the green BRI is an apt platform for furthering international cooperation to prioritize biodiversity conservation in development planning, showcasing China's experiences and expertise, and building capacity among signatory nations.

Among these five approaches, China's ECRL system is most closely aligned with the use of a mitigation hierarchy, which emphasizes the first preference for avoidance of harm, by respecting areas associated with ecological fragility or important ecological services. The strong synergy of these techniques makes China's ECRL approach highly relevant for incorporation into BRI planning. Other BRI signatories are familiar with the approach, and China has found great success with it domestically. Incorporating ECRL planning – in the context of international collaboration – into BRI project planning could be a powerful tool in aligning the BRI with SDG 15. SDSN Executive Director Guido Schmidt-Traub (2020), writing for China Dialogue, notes that “China is the only country practising such comprehensive and ambitious land-use planning”, and that “China's experience may be relevant for any country wishing to meet the objectives of the CBD and the Paris Agreement”. According to Schmidt-Traub (2020), the inclusion of land-use maps in climate and biodiversity strategies would enable the success of CBD COP 15 and UNFCCC COP 26, while land-using planning itself can serve as a critical tool for directing the economic stimuli in the right direction after the COVID-19 pandemic.

3. ANALYSIS OF SDG 15 RELATED INVESTMENTS POSSIBILITIES

Working towards SDG 15 is no small task. Biodiversity is fragile and necessary for the lives and livelihoods of global communities, and if damaged, difficult or impossible to regenerate. To prioritize it among the ever-accelerating world of international finance and investment, the field of biodiversity finance has emerged.

The need is certainly present and pressing. At a 2015 workshop in Beijing, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) concluded that “urgent and concerted action” was needed to avert ecosystem degradation globally, for the sake of 3.2 billion people currently impacted by degraded lands (Montanarella, Scholes, and Brainich, 2018). Economically, they estimate that the losses caused by this biodiversity degradation amount to 10% of global GDP. These same authors track successful ecosystem restoration across every region and continent of the globe.

Biodiversity conservation is, by definition, an act that prioritizes long-term well-being over short-term booms. It requires investing in the natural capital necessary to support future economic production and human health. It also requires investing in activities that will pay off in positive externalities distributed throughout a wide array of communities, which the investor will not be able to completely reap themselves. Thus, it needs external encouragement in order to flourish, in the form of an enabling policy environment, preferential financial arrangements, and impact investors motivated to fuel positive change not only for their own portfolios but for the communities where they operate.

3.1 Survey and Assessment of the Chinese Experience

The SDG 15 aims to protect, restore and promote the sustainable use of terrestrial ecosystems. In recent years, China has continuously increased its financial input in ecological compensation mechanisms, transfer payments to ecological function areas, grassland compensation, subsidies for returning farmlands to forests, subsidies for wetland protection and restoration, and other programs. In the meantime, China has continued improving the property right system of natural resources, exploring new ways of cooperation among governments, businesses and environmental organizations, promoting sustainable forest management, combating desertification, halting and reversing land degradation, and halting biodiversity loss. In 2018, China scored 62.7 on SDG 15, up by 7% compared with 2017, indicating that certain progress has been achieved in terms of terrestrial ecosystem protection.

The ecological compensation mechanism continues to improve¹. The Chinese government attaches great importance to the development of the ecological compensation mechanism and launched policy documents such as *Suggestions on Improving the Ecological Compensation Mechanism*, *Guidelines for Accelerating the Development of a Horizontal Ecological Compensation Mechanism for Upper and Lower Reaches of Rivers*, *Action Plan for the Establishment of a Market-Oriented, Diversified Ecological Compensation Mechanism*, *Guidelines for Establishing and Improving the Long-term Mechanism for Ecological Compensation and Conservation in the Yangtze River Economic Belt*, and *Plan for A Pilot Program of Establishing a Comprehensive Ecological Compensation Mechanism*. These documents establish the framework of an ecological compensation mechanism with Chinese characteristics. China had a fiscal input of nearly RMB 200 billion yuan in ecological compensation in 2019. Meanwhile, both the central and local governments have been taking market-oriented approaches to expand the source of funding for improving the ecological compensation mechanism. For example, the water source areas of the middle route of the South-to-North Water Diversion Project established ecological compensation through pairing cooperation; Jinhua City and Pan'an City in Zhejiang Province took the lead to adopt off-site development as a means of compensation; the drainage areas of Xin'an River engaged the private sector in ecological compensation programs; Moutai Group plans to invest a total of RMB 500 million yuan in 10 years starting from 2014 in water environment compensation in the drainage areas of Chishui River; and China Three Gorges Corporation has been playing an active role in the protection of the Yangtze River while exploring for market-oriented approaches to improve the compensation mechanism.

Transfer payments to ecological function areas have been increasing. To guide local governments to intensify the efforts to protect the ecological environment, and improve the capacity of local governments in places with national key ecological function areas to provide basic public services, the central government established the transfer payment system for key national ecological function areas in 2018 to support the protection of these areas. By the end of 2019, the central government has made transfers amounting to RMB 524.2 billion yuan to key national ecological function areas, of which RMB 81.1 billion yuan was made in 2019, RMB 9 billion yuan more than in the previous year, registering an increase of 12.5%. Meanwhile, China has kept expanding the coverage of key national ecological function areas to 819 counties. Once included in national ecological function areas, local governments will receive financial and policy support as long as they strictly implement the negative list system for industrial access. According to relevant regulations, a region counted as a key national ecological function area needs to strengthen ecological protection and restoration, regulate the boundaries of industrialization and urbanization, and enhance the supply capacity of eco-products.

¹ An Exploration to the Development of An Ecological Compensation System with Chinese Characteristics [N]. China Environment News, 2019-12-18

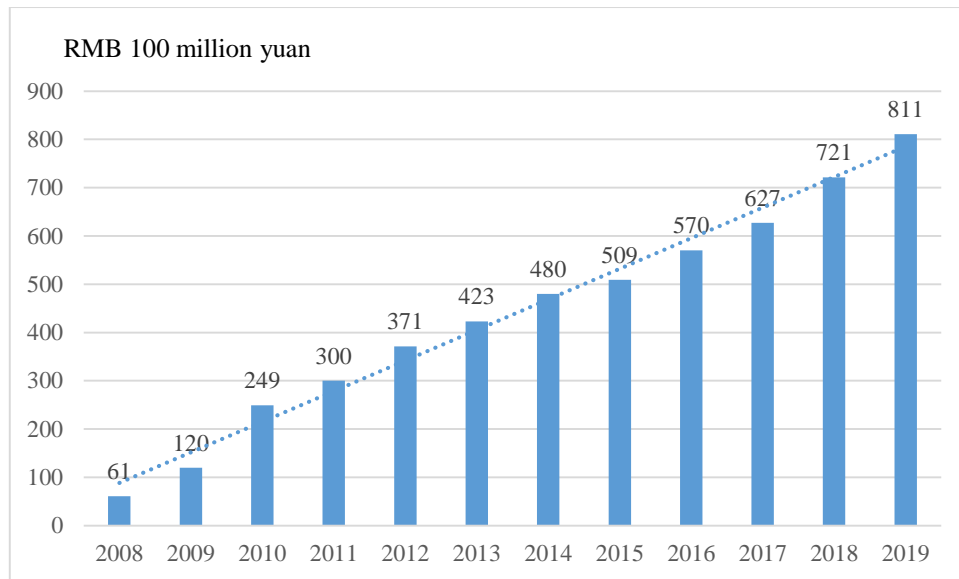


Figure 3-1. Transfer Payment to Key National Ecological Function Areas (2008-2018)

Source: Dong et al, 2018; Ministry of Finance, 2018.

The standards for the compensation for ecological services of forests have been rising. In recent years, the central government has been increasing its input in compensation for ecological services of forests and raising the standards for compensation year by year. Starting from 2010, the standards of compensation for state-level non-commercial forests have varied according to their ownership. The compensation rate for state-owned state-level non-commercial forests was RMB 5 yuan/year·mu (1 mu = 0.067 ha) in 2010, while that of privately-owned and community-owned state-level non-commercial forests has increased from RMB 5 yuan/year·mu to RMB 10 yuan/year·mu. In 2013, the compensation rate for privately-owned and community-owned state-level non-commercial forests was raised to RMB 15 yuan/year·mu. In 2015, 2016, and 2017, the rate for state-owned state-level non-commercial forests increased step by step, reaching RMB 6 yuan/year·mu, RMB 8 yuan/year·mu and RMB 10 yuan/year·mu respectively. As the central government increases its fiscal input and raises the standards for compensation, local governments are expected to positively improve compensation system for ecological services of forests in local areas.

Policies for fiscal support to ecological protection and restoration of wetlands continue to improve. China attaches great importance to the protection of wetlands with increasing fiscal input in accelerating the development and optimization of policies concerning fiscal support to ecological protection and restoration. From 2013 to 2016, the central government allocated RMB 5 billion yuan to protect wetlands in China and continued to provide support through the Funds for Reform and Development of Forestry afterwards. In 2014, the Ministry of Finance and the State Forestry Administration launched the pilot program of wetland ecological benefit compensation. For important wetlands on the route of migratory birds managed by the forestry system, their loss due to the protection of birds and other wild animals will be properly compensated. Currently, the central government allocates fiscal input to local governments, who will then decide the scope of wetland ecological benefit compensation and the areas to be protected.

Box 4. Measures Taken by the Funds for Reform and Development of Forestry to Support Wetland Protection and Restoration

The first measure entails supporting the protection and restoration of wetlands. For wetlands of international/national importance, national wetland parks at important ecological locations, and national wetland nature reserves at or above the provincial level managed by the forestry system, efforts will be

made to protect and restore the wetlands, improve the current ecological status, and maintain the health of the local ecosystem.

The second measure entails supporting the restoration of farmland to wetland. It is encouraged to return farmlands to wetlands within the wetlands of international importance, national wetland nature reserves, and provincial nature reserves within wetlands of national importance managed by the forestry system, so as to expand the area of wetlands and improve the surrounding ecological status. The third measure entails supporting the wetland ecological benefit compensation. For important wetlands on the route of migratory birds managed by the forestry system, their loss due to the protection of birds and other wild animals will be properly compensated. In so doing, all parties are motivated to protect wetlands and maintain the wetlands' ecosystem service functions.

The grassland ecological protection subsidy incentive policy has been continuously promoted. To protect grassland ecosystem, guarantee the supply of meat and dairy products, and increase the income of herders, the Chinese government implemented the grassland ecological protection subsidy incentive policy. Currently, it covers eight major pastoral provinces (autonomous regions), including Inner Mongolia, Xinjiang, Tibet, Qinghai, Sichuan, Gansu, Ningxia and Yunnan, and five non-major pastoral provinces, such as Heilongjiang. RMB 152.033 billion yuan has been given as subsidies to 268 pastoral and farming-pastoral counties in the above provinces. In 2019, a new round of grassland ecological protection subsidy incentive of RMB 18.76 billion yuan was included in the central budget to support the banned grazing area of 1.206 billion mu and the grass-animal balance area of 2.605 billion mu.

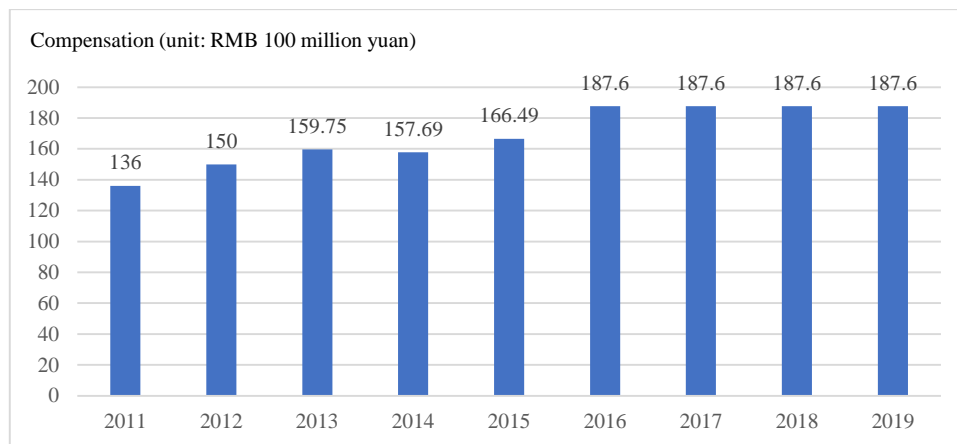


Figure 3-2 Grassland Ecological Protection Subsidy Incentive (2011 – 2019)

Source: Chinese Academy of Environmental Planning (2018); Ministry of Finance website.

The unified confirmation and registration of natural resources has been rolled out. The confirmation and registration of natural resources is important in promoting the reform of the property rights mechanism of natural resource assets, which is a key part of China's ecological civilization framework. By the end of October 2018, 1,191 natural resource registration units have been established in 12 provinces (autonomous regions) and 32 pilot areas, and the total registered area has reached 186,727 km². The state also focused on exploring the confirmation and registration of national parks, wetlands, water flows, and proven reserves of mineral resources. Starting from the end of 2018, the confirmation and registration of natural resources in key areas has been implemented nationwide step by step. It is planned that within 5 years, the unified confirmation and registration of natural resources in nature reserves will be completed, such as national and provincial key parks, natural reserves and various natural parks (scenic areas, wetland parks, natural heritage, geo-parks, etc.). At the same time, the unified confirmation and registration of individual natural resources with complete ecological functions owned by the public will be conducted, such as major rivers and lakes,

key wetlands, key national forests, important grasslands, and other areas.

Innovative approaches have been taken to promote cooperation between governments, environmental organizations, and large enterprises. “Debt-for-nature swaps” can be traced back to the 1980s. In a debt for nature swap, a nation agrees to swap the preservation of the natural environment for some of its debt. This benefits the nation because it brings its overall debt level down, and it benefits the environment by creating more protected habitat for animals and plants. Debt-for-nature swaps may be organized by conservation organizations or by governmental organizations concerned with environmental preservation. Currently, China doesn’t have any recorded cases of debt-for-nature swaps. However, there are many cases in which international organizations or large enterprises cooperate with governments in environmental protection for win-win benefits, mostly in the form of Payments for Ecosystem Services (PES). The project for the protection of water source jointly operated by The Nature Conservancy (TNC) and Longwu, Zhejiang Province is a case of such a practice. The project, with TNC as the consultant, protects water source areas with funding from trust agencies. The forest land is operated and managed in an integrated manner. The income from such operations is used to cover the compensation to farmers and the cost of the protection and management of the water source area. In this way, the water source could be properly protected and the trust fund company could get a fair share of economic return.

Box 5. Water Source Protection Program Jointly Operated by TNC and Longwu, Zhejiang Province in the Form of Trust

On January 15, 2015, TNC and the government of Huanghu County, Zhejiang Province, signed an agreement on the protection of Longwu Reservoir, a county-level water source. According to the agreement, the goal of the program is to reduce the factors that may cause water quality deterioration and improve the water quality of the reservoir from Class II to Class I. It is a good attempt to adopt a win-win model towards ecological conservation that could benefit both the environment and the community. Funded by Alibaba Foundation, it is the first water source protection program of TNC in China in the form of trust. In September 2015, Wanxiang Trust-TNC Charitable Trust decided to invest RMB 330,000 yuan to support the program (TNC, 2015; Liu Liwen, 2015).

In November 2015, Wanxiang Trust launched the first water fund trust in China – Wanxiang Trust-Shanshui Fund No.1. Shanshui Fund Trust invited TNC to be the consultant. In the same month, the first water source protection and management project supported by the Trust – Longwu Small Water Source Protection Program was officially launched.

The program is an innovation that integrates social resources and engages multiple actors, including farmers, financial institutions, charity organizations, local organizations, businesses in the lower stream of the industrial chain related to agriculture in its daily operations. In this way, it could generate positive outcomes through interaction, collaboration and sharing. The program effectively addressed the issue of pollution caused by human activities that could benefit the whole community; it also established a sustainable funding mechanism that could bring environmental benefits and economic returns for investors.

Mode: Trust

Target of compensation: Residents in the nearby community

Main provider of compensation: Alibaba Foundation

Means of compensation: Farmers entrust the forest land to the trust and get steady income as compensation

Operation mechanism: The trust agency operates and manages the forest land while promoting the growing of bamboo shoot and ecological tourism. The income from such operations is used to cover the compensation to farmers and the cost of the protection and management of water source area.

3.2 Survey and Assessment of International Practices

Globally, biodiversity finance has taken a variety of approaches, often in the form of PES or investments in soil and water health to ensure their ability to support future agriculture. The former category has been explored among developed as well as developing countries, under a variety of terms including “eco-compensation” in China and “agri-environmental programs” in the European Union (Schomers and Matzdorft, 2013). A recent global survey in the journal *Nature Sustainability* estimates that over \$36 billion is invested in PES annually, with approximately one-third of that amount taking place within China (Salzman et al, 2018). Of the conservative USD 36 billion estimate, the great majority is estimated to be concentrated in watershed subsidies, which attract approximately USD 23.7 billion per year. One of the better-known examples of watershed PES programs among developing countries is found in Ecuador, where the capital city of Quito established the world’s first municipal water fund, with the cooperation of TNC, in 2000 (Echavarría, 2002). Quito’s groundbreaking PES program (named FONAG for the Spanish acronym for Water Protection Fund) adds a surcharge on water users and included a bottled water plant in order to fund the conservation of the watershed that provides water for the municipality of Quito.

A second common approach – and one of particular importance for the context of a green BRI – is the use of biodiversity offsets. These financial arrangements seek to mitigate the *net* biodiversity impact (or create a positive net biodiversity impact if possible) due to new project construction by financing separate conservation efforts. Enabling policies for this type of biodiversity financing exist throughout Asia, Europe, and the Americas, but range widely in definition (Bull et al., 2013; Gelcich et al., 2017; McKenney and Kiesecker, 2010). A recent study in *Nature Sustainability* which considered only those projects implemented under a “no net loss” policy, found nearly 13,000 such projects globally, cover an area of roughly 153,679 km². Some of the largest existing such programs have occurred in very disparate countries, including: Mongolia, Brazil, and Uzbekistan (Bull and Strange, 2018). However, as Gardener et al (2013) demonstrate in a *Conservation Biology* article, the “no net loss” standard is highly ambitious in practice, requiring comparable gains of new biodiversity (not simply conservation) relative to the biodiversity losses that are to be offset, and requiring that those gains be maintained over the long term. Accomplishing these goals requires strong institutional support and the involvement of a wide array of geographic locations, in order to effectively “hedge” the risks of partial project failure.

More broadly, biodiversity offsets take place within the mitigation hierarchy described in section 2.2.2. As part of the “compensation” stage, offsets serve as a last option if the earlier options of avoiding, minimizing, and rehabilitating/restoring ecosystems and the communities that rely on them are not feasible or insufficient. For example, Villarroyo, Barros, and Kiesecker (2014) review the national policies regarding biodiversity offsets in Latin America and find that three countries’ national regulations (Chile, Colombia, and Mexico) specifically make mention of both the mitigation hierarchy and offsets in relation to their EIA processes. However, many scholars note that significant institutional capacity building work remains in governments that seek to support offset schemes, particularly in establishing the scientific bases for “ecological equivalence” between geographic areas, in order to be assured of the net biodiversity impact of offset schemes (Bezombes et al., 2017; Bull et al., 2013; Gardner et al., 2013; Qu étier and Lavorel, 2011).

Nonetheless, Luck, Chan, and Fay (2009) find that global biodiversity finance has suffered from a severe geographical mismatch: flows have been directed mostly to low-priority ecosystems, while the most important ecosystems have been overlooked. Over half of all flows are focused on the United States, Canada, and Europe, despite the fact that these ecosystems are of “mutual low priority” for the two goals of preserving ecosystem services and biodiversity. Meanwhile, areas of high priority for both of those goals are concentrated in Southeast Asia and South America, which have attracted less than 15% of global biodiversity collectively. This mismatch is assuredly related to the fact that approximately half of all biodiversity finance stems from domestic government funding, and so



funding is staying within wealthy countries. Thus, if the world is to make progress toward SDG 15, international biodiversity cooperation – through investment and especially aid – will be key.

Incorporating Commercial Investors

Traditionally, biodiversity finance has been limited to aid: official development aid (ODA) and philanthropy. However, opportunities for commercial investors have also been developing in recent years. Many types of biodiversity-maintaining or biodiversity-enhancing activities will pay for themselves in the medium-to-long term, though they require new sources of upfront financing to launch. By preserving or enhancing existing natural capital, these investment possibilities allow for reduced costs in economic production in the long term. For example, Burian et al. (2018) advocate for agricultural investments aimed at building soil health and resilience, which will bring economic benefits in increased crop yields and decreased expenses on agricultural inputs. IPBES estimates that the economic benefits of soil preservation are an average of 10 times greater than the cost of those efforts (Montanarella, Scholes, and Brainich, 2018). Finally, these benefits are multiplied as they impact downstream ecosystems through less-polluted waterways that better support both urban and rural life.

However, to succeed, biodiversity finance efforts must be well-matched with local needs, well-designed with local input, and well-managed by local governments. Clark, Reed, and Sunderland (2018) find that the sector is beset by potential “greenwashing,” in which commercial investors’ activities are not actually biodiversity-enhancing or biodiversity-protecting, but market themselves as such in order to access advantageous financing and public reputational enhancements. While a few such investments may do no harm, allowing this type of activity to flourish under the banner of “biodiversity finance” brings risks to the entire sector, threatening the legitimacy of its claims and with it, its access to the favorable financing that will ensure its continued viability.

Bearing in mind the potential benefits as well as the potential risks, the United Nations Development Programme (UNDP)’s Biodiversity Finance Initiative (BIOFIN) has developed five areas of focus for developing frameworks for commercial biodiversity finance:

- Policy and Institutional Review, examining the ways in which national institutions are sufficiently robust and well-designed to encourage biodiversity finance, as well as what areas can benefit from reforms (with the added optional aspect of identifying economic drivers of biodiversity loss);
- Expenditure Review, calculating current expenditures to support biodiversity;
- Needs Assessment, estimating the total amount necessary in biodiversity-supporting expenditures and the gap in actual spending;
- Finance Plan, setting targets and finding potential sources for this funding;
- Finance Solutions, establishing and carrying out a plan to address the institutional and financial gaps discovered in previous steps.

Bilateral BIOFIN Cooperation Between Partner Governments

As the sector of biodiversity finance continues to expand, and particularly as it opens to commercial activities, China has the opportunity to establish itself as a global leader in the field. The globally networked nature of the BRI highlights the importance of working to preserve biodiversity in the “hotspots” along the network, to ensure that the entire enterprise brings net benefits to the communities and the ecosystems that support them.

Two such “hotspots” stand out among potential partners for Chinese conservation finance, one on each side of the Pacific Ocean: Indonesia and Ecuador—two countries with BRI MOUs with China. Both are among the 17 mega-biodiverse countries, who collectively boast 17% of the world’s species. They represent the peak of global terrestrial and marine biodiversity, respectively. Ecuador is home to the most biodiverse section of the Amazon rainforest, often called the “lungs of the earth” (Bass et al.,



2010). The Ecuadorian Amazon rainforest sits at the headwaters of the Amazon River, and ecosystem preservation there has the potential to benefit the downstream Amazon biome. Indonesia sits in the center of the world's marine biodiversity, sometimes called the "Amazon of the Seas" or the Coral Triangle, for the tremendous density and diversity of coral species there (Hoeksema, 2007). Both countries have made significant progress in their UNDP BIOFIN process, preparing to host and manage biodiversity finance successfully.

Furthermore, both Indonesia and Ecuador have strong economic ties with China. According to FDI Markets, China has created more new investment in Indonesia than in any other country in the last decade: over USD 52 billion. Ecuador, while a much smaller country, has also built up an important friendship with China. For the last decade, China has been Ecuador's most important creditor, creating deep goodwill between the two governments. In 2019, Ecuador became the first Latin American or Caribbean nation to become a full member of the AIIB, signaling its interest and institutional readiness to continue to strengthen its financial ties with Asia and in particular, with China.

One major obstacle to biodiversity preservation is a simple matter of geography: biodiversity hotspots are disproportionately located in developing countries, with limited fiscal space to design and carry out long-term projects that will not yield financial benefits for many years. One way to circumvent this problem is for these countries to collaborate in a bilateral or plurilateral fashion with their most important strategic partners, either creditor nations or major sources of investment, to ensure that the growth in economic activity between their nations does not bring environmental degradation. Three main models are common in the area of bilateral biodiversity finance: debt-for-nature swaps, National Environmental Funds (NEFs), and bilateral sustainable development banks.

In debt-for-nature swaps, creditors cancel a share of the debt in exchange for the debt service payments being redirected to maintain biodiversity. Alternatively, impact investors or international non-profit organizations play a pivotal role, negotiating a deal in which they buy a country's debt at a discount, work with the debtor nation to build the institutional infrastructure to oversee the biodiversity plan, and help establish a fund to support these activities. These deals can effectively cut off a vicious cycle of fiscal constraints leading to insufficient environmental management, hurting economic outcomes, reinforcing fiscal constraints.

When implemented well, debt-for-nature swaps can allow chronically indebted countries an alternative to environmentally-damaging activities to pay down debt. They can also create an institutional structure to oversee the establishment of definitions of sustainable economic activities appropriate for the newly protected areas, and the fiscal space to ensure that the new protections are well-managed, with adequate participation from local communities to ensure enforcement. However, debt-for-nature swaps are not quick fixes for serious debt problems, nor can they bring a sudden stop to ongoing ecological disasters. As the case of Seychelles demonstrates, establishing the conservation areas is a process of multiple years. Thus, rather than being used as a last resort or rescue option for disaster scenarios, it is best considered as a long-term, proactive approach to conservation.

NEFs share many of the same characteristics of debt-for-nature swaps, but with less intervention on the part of outside partners. NEFs are locally-managed funds set up in collaboration with external partners, that support conservation efforts domestically. The "trust fund" nature of NEFs can make them particularly appropriate funding instruments for projects that need medium- or long-term investments, such as the delineation, establishment, and maintenance of national parks. For example, Brazil's Amazon Fund supports non-deforestation livelihood projects for forest-dwelling communities (Klinger, 2019). Other Amazon-basin countries including Bolivia, Colombia and Peru have NEFs to support their national systems of protected areas. In Asia, Bhutan and the Philippines both have similar funds (Dillenbeck, 1994).

While NEFs are managed by national governments, they can be established in conjunction with strategic partners overseas. For example, the Foundation for the Philippine Environment has been



supported through debt swaps from the United States and Japan. In these cases, NEFs are similar to the debt-for-nature swaps profiled above, without the same level of detailed conditionality. Instead of debtor nations agreeing to set aside particular tracts of land, they establish general support for the nationally-defined conservation strategies. The fact that the local governments oversee the funds and their management makes them suitable for bilateral cooperation with partners that prefer to allow as much local direction as possible.

Finally, bilateral conservation financing can take the form of special-purpose development banks. For example, the North American Development Bank is a project of the governments of the United States and Mexico, and was brought into being as part of the negotiations for the North American Free Trade Agreement (NAFTA), with the objective of ensuring that the U.S.-Mexico border would not be degraded due to the higher economic activity expected under NAFTA. It finances sustainable development projects on both sides of the border (Knox, 2010). It has financed USD 1.2 billion in projects as of year-end 2018 (North American Development Bank, 2019). This model may be particularly attractive in the establishment of cross-border transit corridors such as those in the BRI, or in partnerships between countries that expect to see significant increases in investment and trade.

Box 6. Debt-for-Nature Swap in the Seychelles

NatureVest, the biodiversity finance platform of TNC was founded in 2014 to mobilize private capital for conservation. In 2016, in conjunction with other private funders, NatureVest signed a deal with the Seychelles' Paris Club creditors, to buy a portion of Seychelles' debt at a discounted rate, spending approximately \$22 million for approximately \$25 million in debt.

In cooperation with the government of Seychelles, this debt relief will allow the establishment and maintenance of approximately 400,000 km² of ocean. As of this writing, roughly half of that area has already been set aside, in the form of two new protected areas. The remainder is expected to be added within a year of this writing.

Two factors have contributed to the success of this debt-for-nature swap: the leadership of the government of Seychelles and the unhurried nature of the planning process. Through both of these strategies, this Seychelles project has been able to earn the local support necessary for management and enforcement over the years to come.

This process represents a culmination of existing national government goals announced in 2012, when it announced a plan to increase protected areas to include 30% of its marine EEZ ("The Initiative," 2019). Seychelles adopted a mapping methodology using international best practices, adapting UNESCO (Ehler and Douvère, 2009) recommendations. To determine which marine areas would be protected and what sustainable activities would be permitted, the MSP incorporated the input of 10 ministries and 100 public stakeholders who participated through 9 public workshops and 60 consultations.

To ensure the program's viability, the government of the Seychelles led a mapping process, the Seychelles Marine Spatial Planning (MSP) initiative, beginning in 2014 ("Seychelles Marine," n.d.). The MSP has been a deliberately time-consuming process in order to ensure an evidence-based outcome with sufficient public input. In fact, while Phase I was completed in 2018, protecting 15% of the Exclusive Economic Zone (EEZ), Phase II is not expected to finish until the end of 2020 ("The Initiative," 2019).



3.3 The Applicability of Chinese Domestic Experience for Biodiversity Finance with International Peers

Both within China and globally, biodiversity finance has grown tremendously in the last decade. PES programs have been popular internationally for many years but have skyrocketed in the last decade within China. China's peers have also more deeply explored other types of biodiversity finance, such as offsets and debt-for-nature swaps. In these areas, China's scientific expertise could help their peers face some of those avenues' obstacles, and China can also learn from international successes.

While many countries have pursued PES programs, the depth, scope, and rapidity with which China has developed its internal programs hold important lessons for its peers. Programs to support reforestation (differentiated between purely ecological forests and commercial forests), farmland conversion to grasslands (differentiating between no-graze areas and mixed areas) and wetlands (including special compensation for lands along important migratory bird routes) show a level of scientific expertise and local understanding that many other BRI national governments could draw reference in accordance with their own conditions. The collaborating context of the BRI allows for information sharing and collaborative planning. In this context, it would be wise to share these experiences where possible.

Globally, biodiversity finance has been a mix of administrative and market mechanisms. In some instances, governments manage programs entirely, especially those focused on payments for environmental services. However, in the cases of offsets, where biodiversity enhancements are specifically linked to biodiversity loss caused by commercial investment, governments have focused on establishing legal frameworks to enable biodiversity offset mechanisms. While biodiversity offsets have grown popular in developed and developing countries alike, the complexity of managing multiple geographic sites (where biodiversity is being lost and gained) creates significant demand for institutional capacity. Specifically, scientific expertise is needed to establish an ecological survey to accurately establish equivalence between sites and measure outcomes. Even though China does not specifically link biodiversity-enhancing programs with biodiversity-damaging building projects through offsets, it has had to develop this same type of institutional capacity to establish its ECRL system. Situations where BRI peers are pursuing offsets may be excellent opportunities for collaboration in this area.

A 2019 joint report between the China Development Bank and the UNDP identified key benefits for collaboration and harmonization of standards and across the BRI, summarized in Table 3-1. From this research, it is clear that all partners will be made better off by harmonizing standards and sharing expertise from China's ECRL system, partners' biodiversity finance experience, and shared priorities for conservation.

Table 3-1: Benefits of Harmonizing Standards along the Belt and Road

Nation	Beneficiary	Benefit
China	Government	<ul style="list-style-type: none"> • Prevention and mitigation of reputational risk; • Prevention and mitigation of environmental and social risks.
	Financial institutions	<ul style="list-style-type: none"> • Prevention of default risk; • More innovative and competitive financial services.
	Business entities	<ul style="list-style-type: none"> • Expansion of markets; • Greater returns and effectiveness of projects; • Improved competitiveness and risk management.
Partners	Governments	<ul style="list-style-type: none"> • Economic growth and poverty alleviation; • Improved management of fiscal resources; • Improved management of natural resources; • Strengthening of institutional capacities; • Prevention and mitigation of environmental and social risks; • Reduction of compliance costs.
	Business entities	<ul style="list-style-type: none"> • Expansion of domestic markets and linkage to international value chains; • Increased opportunities for participation in BRI-related procurement; • Improved compliance and risk management.
All	Local communities	<ul style="list-style-type: none"> • Improved livelihoods, decent jobs; • Reduced likelihood of social conflict; • Enhanced voice and ownership of projects; • Reduced vulnerability against potential negative impacts.
	Global community	<ul style="list-style-type: none"> • More equitable use of resources and growth; • Enhanced interconnectivity and cooperation; • Provision of global public goods; • Improved global governance.

Source: Reproduced from UNPD and CDB (2019).

4. ANALYSIS OF SDG15-RELATED GOVERNANCE STRUCTURE

4.1 Survey and Assessment of Practices in China

4.1.1 Governance Structure

China has integrated biodiversity into the target system for building an Ecological Civilization, and has been constantly improving the system and institutional settings for biodiversity conservation. It employs a system characterized by unified national regulation and division of responsibilities and cooperation among different sectors to protect biodiversity. In particular, right after it approved the CBD in 1993, China established a Coordinating Group for the Implementation of CBD, with the former State Environmental Protection Administration (SEPA) as the leading agency and the participation of 20 departments/line ministries under the Chinese State Council. It founded a CBD implementation office in the then SEPA and identified the national focal points for CBD implementation, biodiversity clearing-house mechanism, and biosafety respectively. An inter-ministerial Joint Meeting for Protection of Biological Resources was set up at the same time. The Coordinating Group meets every year to develop an annual work plan for CBD implementation and launches a variety of activities. So far, an initial national working mechanism has been formed for biodiversity conservation and CBD implementation. China started the development of a China Biodiversity Conservation Action Plan in 1992 and released the finalized document in 1994. This



Action Plan has identified both the location of ecosystems and the list of species for priority conservation, and set out the goals for seven areas of biodiversity conservation in China.

In 2010, the State Council of China founded the “China National Committee for the 2020 International Year of Biodiversity”. During its meeting, the State Council reviewed and approved the China Action Plan for the International Year of Biodiversity and the China National Biodiversity Conservation Strategy and Action Plan (2011 – 2030). In June 2011, the State Council decided to rename the “China National Committee for the International Year of Biodiversity 2010” as the “China National Committee for Biodiversity Conservation”, and designated the Vice Premier of the State Council in charge of environment as the Director of the Committee. At present, this Committee has 23 member departments/ministries. It is mandated to coordinate all biodiversity conservation efforts in China, and direct the implementation of China actions for UN Decade on Biodiversity. The establishment of the China National Committee for Biodiversity Conservation shows China’s determination to strengthen environmental protection and promote sustainable development, and its commitment to the international community. Since 2015, China has promulgated or revised 56 policies, laws and regulations related to biodiversity conservation, with the policy and legislative system for biodiversity conservation in China gradually improving.

In addition to the governance structure at central level, the environmental protection agencies of the governments at provincial level have also been carrying out reforms to better protect biodiversity. In 2008, SEPA was upgraded to the Ministry of Environmental Protection (MEP) and became a department of the State Council. All the provinces, autonomous regions, and municipalities have upgraded their environmental protection agencies to departments, building a unified environmental protection system. Referring to the responsibility and function orientation related to biodiversity conservation at the national level, some provincial governments have established relevant coordination mechanisms, specifying the leading role of environmental protection departments in biodiversity conservation and the corresponding responsibilities of multiple internal agencies within those departments. To go with the actual local conditions, some provinces have set up administration agencies in line with the needs of local biodiversity conservation. For example, Yunnan Province has set up a Lake Protection and Administration Division, showing the local features of its institutional reform and biodiversity conservation. In 2018, in accordance with the “Decision of the Central Committee of the Communist Party of China on Deepening the Reform of the Party and Government Institutions”, the Chinese State Council established the new MEE to practice the holistic thinking of integrated management of mountains, waters, forests, farmlands, lakes, and grasslands. All provinces, autonomous regions and municipalities have formed their new Department of Ecological Environment to comprehensively guide, coordinate and supervise the work of eco-environmental protection.

Annex 4 gives a more detailed description of China’s progress in implementing policies for biodiversity conservation, elements of corresponding governance structure, as well as additional major institutions with conservation and management responsibilities which includes the China Biodiversity Conservation and Green Development Foundation (CBCGDF), the China National Committee for Biodiversity Conservation, and the Biodiversity Committee of the China Academy of Sciences.

4.1.2 Green Belt and Road and Biodiversity Conservation

In the light of China’s experience in biodiversity conservation and need for building a green BRI, early efforts to align green BRI and biodiversity conservation have seen growth in the areas of governance mechanisms, governance system, information, technology development and scientific research, as well as green investment and finance, so as to jointly promote biodiversity conservation and implementation of SDG 15 in BRI participating countries.

First, there was a focus on establishing a mechanism and platform for cooperative governance to enable the improvement of a governance system for biodiversity conservation in BRI participating countries. Important progress began to show in integrating the existing bilateral and multilateral



international cooperation mechanisms with green Belt and Road, building a network for biodiversity conservation, innovating cooperative models, as well as formulating a cooperation platform with inclusive participation of multiple stakeholders, including national governments, think tanks, business, civil societies and the wide participation of the public. Meanwhile, it is necessary to give full play to the mechanisms established for China-ASEAN cooperation, the Shanghai Cooperation Organization (SCO), the Lancang-Mekong cooperation, the Conference on Interaction and Confidence Building Measures in Asia, Euro-Asia Economic Forum, the Forum on China-Africa Cooperation, and the China-Arab States Cooperation Forum among other cooperative platforms. Efforts are still needed to facilitate the establishment of environmental cooperation platforms for the six major Economic Corridors, and expand cooperation with relevant international organizations and agencies, so as to promote the effective implementation of SDG 15.

Second, efforts have been made to enhance cooperation on green technologies and research and development. There is a growing demand for the transfer of green, advanced and applicable technologies in developing countries along the Belt and Road, as well as need for joint research and development, promotion and application of cutting-edge technologies on the conservation of biodiversity. Specifically, further actions are to be taken for a platform on scientific research and technology development across scientific and research institutions and think tanks. Joint research with relevant countries and regions on biodiversity is a favorable opportunity for the conservation of global biodiversity. With the scientific study over the biodiversity of countries and regions along the Belt and Road, it would contribute to the analysis on the biodiversity evolution mechanisms and its characteristics and patterns on geographical distribution in these regions, expedite the scientific research on global diversity and help to provide training and capacity building for young officials and scientists in countries along the Belt and Road.

Third, steps are emerging to promote information exchanges, including biodiversity-related information sharing and disclosure, as well as provision of comprehensive information as decision-making support and safeguard. Growing needs are observed for enhancing the construction of biodiversity information base on the BRI Environmental Big Data Platform; for the full inclusion of national spatial and information infrastructure; for the exchange and sharing on environmental laws and regulations, policy standards and practices and experience; for enhanced comprehensive cooperation among different national departments and the sharing and disclosure on the ecological and environmental information; and for the improved capacity on risk evaluation and prevention targeting at BRI projects overseas. It is necessary to facilitate cooperation on the ecological and environmental information products, technologies and service to provide comprehensive information support and safeguard for building a green Belt and Road.

Fourth, promising progress has been observed in the development of systems on green investment, green trade and green finance. Green finance systems help to build up the foundation for the long-term run of BRI projects. A good example is the Social Responsibility and Environmental Protection Guidelines for Investments in the ASEAN Region released by China-ASEAN Investment Cooperation Fund (CAF). The document prescribes that when CAF provides consulting services for businesses on overseas investment based on its Environmental and Social Management System Arrangements (ESMS), it could refer to the Performance Standards to identify and manage the impacts of environmental and social risks, clarify the evaluation metrics during the investment process, and continuously monitor the later-stage investment, as a way to facilitate invested enterprises to avoid, ease and manage risks via a sustainable operation way. This Performance Standards covers eight areas including biodiversity conservation and the sustainable management of biological and natural resources, which jointly composed the standards that clients should meet on sustainable management of biodiversity through the overseas investment process. Specifically, it includes: (1) checking whether the company understands and deals with the impacts of the project on biodiversity; (2) checking whether the company carries out activities in regions under legal protection; (3) checking whether alien species are introduced in the process of project execution, and checking whether the company has the approval or permission from competent authorities if there are plans on introducing alien species; and (4) checking whether the natural resources, forest and vegetation, fresh water and



marine resources utilized by the project can be regenerated and whether the company is dedicated to managing them in a sustainable way.

Fifth, such documents as the Green Investment Principle (GIP) for BRI have been released to enhance green guidance on business activities and encourage businesses to adopt voluntary measures for environmental protection and sustainable development. It is important to motivate environmental business to explore the national markets in BRI participating countries, and guide competitive environmental companies to “go global” in clusters with reference to China’s experience and standard in building demonstrative ecological industrial parks, so as to enhance biodiversity conservation, prioritize the in-situ conservation and protection in proximity, and take actions for ecological restoration. Meanwhile, efforts have been taken to guide business to augment the research, development and application of major technologies in addressing climate change.

Sixth, there is an increasing necessity to promote gender equality in the BRI cooperation and strengthen female leadership in biodiversity conservation. Biodiversity and gender are hot topics at the international level. Promoting gender mainstreaming in biodiversity conservation has gained widespread attention from the international community in recent years. Biodiversity and gender have been included in the CBD as a key issue. However, such problems as imperfect mechanisms and weak awareness related to gender exist in biodiversity research in China. In view of such problems, the following steps are thus recommended: set up gender focal points in all departments and establish a cross-sectoral communication and cooperation mechanism for gender mainstreaming to comprehensively enhance institutional capacity building; conduct gender mainstreaming training in biodiversity management departments and institutions to raise basic awareness of staff; as well as consider gender in the policies related to eco-environmental protection and green Belt and Road development, and set up gender indicator in the evaluation system for specific projects. Such practice will also help BRI projects to meet the gender-related international standards and requirements of the host countries, promote people-to-people bond, and enable the development of BRI to move forward steadily.

4.2 Survey and Assessment of International Practices

As mentioned in Section 2.2, the environmental management in the international systems has evolved rapidly over the last few decades. The same can be said for the enforcement and accountability of those systems. Just as Section 2.2 profiled the screening and assessment systems of international DFIs, this section profiles the accountability mechanisms of those same bodies.

Across the world, DFIs have mobilized to address SDG 15 and ensure that their activities protect project-affected biodiversity. While section 2.2 explained standards and guidelines, this section explains the DFI governance structures that have been adapted to ensure that conservation is sufficiently considered. It compares governance structures as adopted by Chinese policy banks’ peers: major DFIs, both multilateral as well as national in nature. It includes: AfDB, ADB, AIIB, EBRD, EIB, IADB, IFC, KfW, and the World Bank .

Governance for biodiversity: Incorporating SDG15 into DFI decision-making

As explained in Section 2.2, most major DFIs incorporate biodiversity considerations into their operations through the use of set standards, mitigation hierarchy deployment, and consultations with affected stakeholders, who are likely to depend upon the local ecosystem for their livelihoods and therefore be particularly attuned to any biodiversity threats. In addition to these processes, several DFIs also incorporate other steps to mainstream SDG 15. These approaches are varied across DFIs. However, commonalities do arise in the requirements that DFIs set for themselves in this aspect, including:

- Incorporating expertise into assessments: the AfDB and AIIB require input from qualified experts to identify potentially-impacted ecosystems and ecosystem services.



- Empowering project implementers to adapt to changing conditions: AfDB, AIIB, EIB, and the World Bank all require the use of adaptive management in their projects. In this approach, borrowers and clients must allow for the possibility that as they develop their projects, conditions will not be what they initially expected. Newly-discovered species or other biodiversity-related project impacts may emerge. Project plans should specify what types of challenges may arise, and how the project implementers will adapt to these changing circumstances. With this planning done, implementers are empowered to change plans during the course of the project. In the case of the AIIB, major changes require additional environmental assessments to ensure that they are adapting their plans adequately.

Policy implementation: Monitoring and reporting

Borrowers and clients may commit to responsible environmental management, and DFIs strive to consider the implications for biodiversity, but actual performance will determine final outcomes. To this end, DFIs often institute monitoring and reporting requirements for their borrowers and clients. In doing so, DFIs often emphasize their respect for the national sovereignty of borrowing nations, devising methods that prioritize collaboration between lender and borrower for the best possible outcomes. Several different approaches emerge among DFIs, ranging from those that give borrowers the most responsibility in monitoring to those that utilize outside auditors.

Policy implementation: Grievance mechanisms

Many DFIs – multilateral as well as national – have instituted policies for stakeholders, including independent NGOs and project beneficiaries, to file grievances and request an investigation if they suspect that biodiversity has been harmed in the pursuit of DFI-supported projects. By developing institutional mechanisms for hearing, investigating, and ruling on these claims, DFIs can ensure that their borrowers and grantees are living up to the terms of the agreement, prevent small harms from ballooning into larger harms, protect their own reputation globally, learn from their experiences, and incorporate these lessons into future activities.

These grievance mechanisms can be at the DFI level, the project level, or both. *Project-level grievance mechanisms* allow greater flexibility, by promoting the resolution of problems in a way that is often faster and more accessible for stakeholders than relying on one centralized system for claims from projects all around the world. However, they can be more cumbersome for DFIs to manage, requiring oversight of processes in many different countries. The table below describes common elements in the design of project-level grievance mechanisms: their design, institutional location, processes, and treatment of claimants.

DFI-level grievance mechanisms allow for stakeholders to bring a claim to the central DFI body, or its designated complaint mechanism, for consideration. These mechanisms can be simpler to manage for DFIs, as they only entail the creation and management of one body. However, they can be less accessible for project-affected stakeholders, and may mean that some rulings take more time than they would in project-level mechanisms.

Table 4-1, in Annex 4, shows the various policy elements that DFIs incorporate into their project-level grievance mechanisms. A wide variety of arrangements exist, enabling DFIs to learn from these examples in designing their own mechanisms.

All of the DFIs listed in Table 4-1 also have DFI-level grievance mechanisms, though their design is too varied to display in table form. In addition to these DFIs, several other major multilateral and national development banks have these mechanisms, including the IADB, CAF, and Brazil's National Bank for Economic and Social Development (BNDES).

Incorporating Gender



Regardless of the venue used, international DFIs have learned the importance of ensuring that accountability mechanisms are accessible for women. In many rural, poor settings, women’s property rights are limited, such that ownership is recorded through their fathers, husbands, or sons. In these contexts, national justice systems may not recognize their standing to bring a complaint through local courts, as they may not be able to demonstrate a loss to the value of their property. However, if their concerns are not heard, gender-based biodiversity risks may be unheeded and worsen. Both the ADB and the World Bank have recommended that their projects ensure accessibility for women to their accountability mechanisms, regardless of property (ADB, 2016; World Bank 2009). This stage completes the upstream-to-downstream inclusion of gender considerations in biodiversity finance, to ensure that women are not disproportionately impacted in ways that can limit their ability to act as biodiversity stewards at the local level. Table 4-2 collects best practices from international DFIs on incorporating gender throughout the entire project cycle. It is not intended to be a comprehensive list but rather a collection of common best practices as recorded by research and evaluation staff at DFIs worldwide.

Table 4-2. Best Practices in Incorporating Gender into Biodiversity Finance

Project stage	Best practices
Upstream: planning	<p>In planning for expected local biodiversity losses and changes to community access to local ecosystems, disaggregate the expected impact on local livelihoods by gender. Ensure that women are not disproportionately hurt by greater difficulty in carrying out traditional gathering roles. This practice is particularly effective in contexts where women and men have different traditional work roles.</p> <p>In arranging stakeholder engagement processes, ensure that women can participate fully. This practice helps planners understand the potentially different ways that a project may impact men and women differently. In contexts where women do not traditionally participate in mixed-gender public discussions, consider designing women-only engagement spaces.</p>
Midstream: implementation	<p>In projects where communities receive monetary compensation for a loss of access to local ecosystems, ensure that the financial compensation is distributed in such a way that it does not worsen women’s well being. This practice is particularly relevant in contexts where women traditionally control resources they gather from local ecosystems but men control financial resources.</p>
Downstream: monitoring and accountability	<p>Account for changes in men’s and women’s use of time as well as financial resources. In contexts where women serve as local stewards of crop biodiversity through the cultivation of heirloom crop varieties in household or village gardens, this practice can ensure that biodiversity does not suffer. Garden crop biodiversity can be key to the resilience of local food systems during extreme weather events or economic turmoil.</p> <p>Ensure that accountability and grievance mechanisms are fully accessible to women. This practice is particularly important in contexts where women lack equal property rights, have limited access to local judicial systems, or do not traditionally participate in mixed-gender public discussions. Women’s participation in accountability mechanisms can allow project overseers and sponsors to monitor impacts on women’s traditional role of crop biodiversity caretaker.</p> <p>As part of the post-project evaluation, develop a “tip sheet” for incorporating gender into future project planning in this particular context. This running collection of wisdom will help ensure that future development projects in this cultural context will be able to fully incorporate lessons learned through this project.</p>



4.3 Areas of Convergence and Divergence between China and International Peers

Project governance structures entail both administrative and enforcement mechanisms, both within China and internationally. Domestically, administrative measures entail collaboration among ministries and other government bodies, while enforcement is the purview of the judicial system. Internationally, China's peers collaborate in similar ways by harmonizing standards and expectations among actors internationally. International enforcement and grievance mechanisms serve similar functions to domestic courts, in a way that enables participation from all parties and prioritizes dispute resolution.

Administratively, China's biodiversity-related governance is led by the MEE. In addition, the State Council has formed the National Committee for Biodiversity Conservation to oversee biodiversity actions at the national level, including representation from 23 line ministries and institutions including MEE. Such institutional arrangements have incorporated biodiversity into socio-economic development and sectoral management routines, substantially boosting biodiversity mainstreaming in China. Beyond the national level, provinces, municipalities, and autonomous regions have upgraded their environmental protection agencies to departments, building a nationally harmonized network.

The Chinese judicial system is the primary venue for policy implementation and enforcement, as is to be expected in a domestic context. The Supreme People's Court of China has established an environmental resources division, with guidelines for special biodiversity-related investigations and trials, for courts at all levels across ecosystems. These guidelines serve the goal of improving environmental dispute resolution throughout China, in a unified manner.

Internationally, multilateral government bodies and development finance institutions have incorporated biodiversity governance into project management in a broad spectrum of ways: incorporating feedback from project stakeholders and independent experts; empowering project managers to adapt to changing conditions; establishing institutional mechanisms for accountability and handling grievances; and incorporating gender as a crucial aspect of consideration throughout the project cycle, among others. Administrative mechanisms take the form of upstream planning, incorporating compulsory standards, the mitigation hierarchy, and stakeholder participation measures. As China's international peers include both multilateral and national institutions, and governments as well as financial institutions, harmonized environmental and social risk management approaches have emerged to ensure well-calibrated expectations by all parties from the point of project initiation, to protect collaborative relationships as well as ecosystems throughout the project cycle.

As the BRI continues to expand, harmonized expectations will continue to grow in importance as well. The collaborative nature of the BRI allows for relevant Chinese ministries to take active roles in setting standards, in partnership with peer government representatives from along the Belt and Road.

DFIs that are peers to China's main lenders for BRI projects (the China Development Bank and Export-Import Bank of China) have developed a wide array of monitoring and grievance mechanisms to ensure that their administrative measures are effective. These measures are collaborative by definition, and serve as dispute resolution fora for local communities, national host country governments, and implementing contractors. Like domestic courts, they reinforce public trust in the governance institutions involved. The BRI could benefit strongly from the design and incorporation of a similar environmental dispute resolution mechanism, with a particular focus on biodiversity concerns.



5. POLICY RECOMMENDATION: CONSTRUCTION ROADMAP OF GREEN BELT AND ROAD

This SPS has described the progress that has been made within China and among China's peers in balancing the benefits of investment with the risks to communities and the ecosystems that support them. Given the speed and scope of this institutional progress, it is crucial to harness all of the lessons possible for additional growth, in order to ensure that the BRI fulfills its potential to support sustainable development globally. Built on the results of the first phase of SPS on Green Belt and Road and 2030 Agenda for Sustainable Development, this phase of SPS further improves the roadmap for building a green BRI and proposes policy recommendations for aligning BRI and SDG 15.

5.1 Roadmap for Building a Green BRI

5.1.1 Taking the green Belt and Road Initiative as an important practice of realizing Sustainable Development Goals and facilitating global environment governance reform

It is important to set green development as the fundamental principles of building the Belt and Road. China has the opportunity to integrate green development and ecological civilization through the “five connectivities” in building the Belt and Road, facilitate the construction of green infrastructure, green investment and green finance, and build the Belt and Road into one route towards green and sustainable development so as to establish a community with shared future for mankind on the basis of green development.

China should augment cooperation in the domain of environmental protection on international multilateral platforms for BRI. Specifically, it is necessary to incorporate the Thematic Forum on Green Silk Road as a fixed thematic forum within the schedule of the Belt and Road Forum for International Cooperation (BRF). It is necessary to bring into full play the role of the BRI International Green Development Coalition and the Belt and Road Sustainable Cities Alliance in serving as the international platforms for jointly developing the Green Silk Road, facilitating the realization of SDGs, and improving global environmental governance system. Efforts are recommended to disseminate the concepts and practice of green development in BRI participating countries via champion countries, pilot cities, and demo projects. In addition, China should make good use of BRI's strengths in the five connectivities to jointly facilitate the implementation of policies on ecological and environmental protection, biodiversity conservation, climate change mitigation and adaptation etc. to bolster support for existing international conventions such as CBD, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), UNFCCC, etc.

5.1.2 Establishing the mechanism for linking Green BRI with the 2030 Agenda for Sustainable Development

Given that a green BRI is a crucial tool in realizing the 2030 Agenda for Sustainable Development and in particular promoting international biodiversity conservation, this SPS recommends the following steps to strategically align planning with biodiversity goals:

Enhance policy design. This report recommends that China incorporate the implementation of the 2030 Agenda for Sustainable Development (SDGs) as an important task into building a green Belt and Road. When signing MOUs on jointly building the Belt and Road with relevant countries and



international organizations, China needs to include jointly building a green Belt and Road and expediting the alignment of BRI and the 2030 Agenda as an important part of these MOUs.

Establish a mechanism for implementation. This report recommends setting up working groups/expert teams with partners based on the situations in different countries and jointly draft strategies for building a Green Silk Road together, identifying the priority areas for cooperation in both the short and long terms and fostering sound linkages between different national plans based on the practical needs of implementing SDGs in BRI participating countries.

Develop mechanisms for participation and feedback. A network should be built with government guidance, business support and public participation, prioritizing the perfection of mechanisms on the involvement of international organizations. Initiate the mechanism for whole-process participation, covering negotiation, decision making and dynamic feedback, in order to make sure the successful alignment of building green Belt and Road and implementing the 2030 Agenda for Sustainable Development under open and transparent circumstances.

Establish professional mechanisms for cooperation for cities and localities along the Belt and Road. Cities along the Belt and Road should be encouraged to consider their own industrial structure, advantages, and development goals, and create a policy framework favorable for addressing issues of common concern to explore opportunities for cooperation and guide private sector in participating BRI cooperation.

5.1.3 Establishing and improving the mechanism for project management on green Belt and Road

To incorporate the above-mentioned strategies into BRI project management, this SPS recommends the following steps:

Establish a mechanism for risk evaluation and management of BRI projects. It is important to strengthen communication and coordination between China and BRI participating countries and that among different Chinese government agencies. China should establish science-based risk evaluation and management mechanisms for their projects to respond to various risks, strictly follow the host countries' norms and standards in such procedures as project design, construction, operation, procurement, and bidding. An encouraging environment should be created for BRI projects to apply the principles, standards, and customary practices for environmental protection that are used by international organizations and multilateral financial institutions, and strive to realize goals that are made with high standards, beneficial for people's livelihoods and sustainable. China needs to support its financial institutions to incorporate the ecological and environmental impacts of projects as a key factor in their project rating and risk rating systems, and put forward evaluation methods and instruments on the environmental and social risks for BRI projects as an important metric for granting governmental support, development financial support, and policy financial support. Practice in commercial finance is encouraged to adopt similar standards.

Call for wide application of green finance instruments under the Belt and Road framework. First, establishment of the Belt and Road Green Development Fund needs to be explored, with priority given to projects in support of the development of ecological and environmental infrastructure, capacity building and green industries in countries along the Belt and Road. Second, it is necessary to establish guarantee agencies on green investment and financing under the BRI with the wide



participation of different countries, in order to share risks and mobilize social capital in green domains. Third, there is a need to establish the mechanism for environmental information disclosure, and enhance the transparency of information based on the BRI Environmental Big Data Platform.

Speed up facilitation of trade in environmental products and services. Improve the opening level of environmental products and services market, encourage enhanced import and export of environmental products and services such as pollution prevention and treatment technologies and services, and help foster green industrial development in BRI participating countries.

5.1.4 Jointly conducting green capacity building programs with BRI participating countries

With regard to public engagement, this SPS recommends that BRI project planners take the following steps:

Enhance people-to-people bonds among BRI participating countries. The Green Silk Road Envoys Program should be expanded into a flagship program on capacity building under the Belt and Road framework, which aims to enhance ecological and environmental cooperation and communications and share the ideas and practices of building an Ecological Civilization and green development in China via such activities as capacity building workshops for environmental officials, managers, and practitioners, consultation for policy development, etc.

Support and facilitate the exchange and cooperation of environmental organizations from China and BRI participating countries. The first step is to clarify the leading and responsible government department, and then guide/support environmental organizations to build up their own cooperation networks. In addition, efforts are needed to perfect the mechanism for the involvement of environmental social organizations and come up with a list of items on international communication with the participation of environmental organizations.

Facilitate gender mainstreaming and augment women's leadership roles. There is a necessity to improve gender consciousness among policy makers and women communities and facilitate the mainstreaming of gender consciousness in the process of policy formulation and project implementation for building a green Belt and Road. This report recommends enhancing institutional capacity building on gender mainstreaming in environmental protection related agencies, and explore the possibility of establishing a cross-sectoral communication mechanism to facilitate gender mainstreaming. With the help of the Green Silk Road Envoys Program, China could organize thematic capacity building programs and seminars on improving women's leadership roles in green development upon inviting the participation of female officials, experts, scholars and youth in the domain of environmental protection from BRI participating countries, and share methods and experience in gender mainstreaming with BRI partners.

5.2 Policy Instruments for Aligning the BRI with SDG 15

Under the framework and in the spirit of the general roadmap for building a green BRI outlined above, this SPS recommends the policy directions for aligning BRI, SDG 15, and CBD. The proposed policy recommendations are built with full consideration of the main objective and approaches internationally used for biodiversity conservation. The main objective is focusing on the establishment and mainstreaming of global standards, which are primarily practiced through the establishment of operational risk management strategies to protect institutional reputations and the cooperative



relationships. The corresponding major approaches for operationalizing standards include: (1) aligning institutional practices with international or national commitments, (2) using exclusionary lists of categorically ineligible projects, (3) requiring projects to undergo biodiversity impact assessments, (4) adopting a mitigation hierarchy to do no harm and if possible benefit local ecosystems, and (5) incorporate local stakeholders.

Thus, it is recommended that China should actively align its efforts with the fulfillment of its international and national commitments in the field and put forward initiatives or measures at CBD COP 15. China should align the BRI with other biodiversity related international conventions that China is a signatory to such as the Convention for the Protection of New Varieties of Plants, the Convention Concerning the Protection of World Cultural and Natural Heritage, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and Convention on Wetlands of International Importance Especially as Waterfowl Habitat, and foster synergies with climate related conventions such as UNFCCC. The following five policy directions are thus proposed:

First, improve assessment and classification-oriented management of BRI projects to align the BRI with SDG 15 and the CBD. It is recommended to boost the development of the guidance on assessment and classification of BRI projects, which should include clearly defined positive and negative lists, in order to give adequate attention to the projects' potential impacts related to environmental pollution, biodiversity conservation, and climate change. China needs to provide green solutions to the BRI participating countries. In December 2019, the BRIGC has launched a Joint Research on Green Development Guidance for BRI Projects. As proposed by this joint research, the assessment- and classification-oriented management should consider the various international and national commitments of the host countries, and meet the host countries' needs for economic growth and environmental protection. Such management should guide and assist businesses to incorporate environmental impact assessment (EIA), as well as biodiversity conservation and impact mitigation measures at the stage of project design, so as to ensure that the BRI projects meet with provisions in laws, regulations, and standards on environmental protection as well as those in industrial policies that are recognized by the host countries.

Second, take ecological redlining as a key instrument to link the BRI and SDG 15. As the practice of ecological redlining has yielded promising results in China, it is recognized by the international community, with expectations, that the ecological redlining system is most closely aligned with the use of mitigation hierarchy that is commonly used in biodiversity conservation at global level. There are voices from international academic circle to highlight the contribution of land use planning to the success of CBD COP 15 and UNFCCC COP 26, should land use planning be integrated into climate and biodiversity strategies. It is thus suggested that ecological redlining should be used as a critical tool for linking green BRI and SDG 15, by which China can support BRI participating countries in developing their own land use strategies and plans that are specific to their own conditions and in a similar spirit of ecological redlining.

Third, mainstream biodiversity screening as an integral part in environmental impact assessment for BRI projects. It is vital to strengthen environmental and social risk management to minimize risks to biodiversity. Efforts are needed to establish upstream strategic environmental assessments of all BRI projects with strong biodiversity analyses as an integral component of the EIA. The biodiversity analysis should fully examine the ecological and socio-economic conditions of the project locality, gauge the direct, indirect and cumulative impacts of the project on wildlife habitats and biodiversity, and consider how the project-affected stakeholders value biodiversity and wildlife habitats. In keeping with the Green Credit Guidelines issued by the China Banking Regulatory Commission (CBRC), environmental assessments should ensure that a proposed BRI project adheres to the host country's biodiversity standards, international conventions that China and the host country are parties to, and the principles for harmonizing the BRI with sustainable development outlined by the China Development Bank (UNDP-CDB, 2019). In the meantime, it is of great significance to establish a proper stakeholder consultation mechanism for BRI projects, with the purpose to guarantee



the effective stakeholder participation and consultation in terms of biodiversity assessment and management.

Fourth, adopt a mitigation hierarchy for those projects identified as having significant biodiversity risks as a result of strategic environmental assessment (SEA). The majority of international financial institutions require biodiversity assessments tied to mitigation measures to attain the overall goal of “no net loss” or even a “net gain” in biodiversity. Given such international practice, drawing on its own experience with the ecological redlining, biodiversity offsets, ecological restoration, and ecological compensation schemes, China is recommended to develop a standardized biodiversity conservation hierarchy that should include four components of “avoidance”, “mitigation”, “restoration”, and “compensation”. In the proposed hierarchy, “avoidance” refers to actions taken to avoid creating impacts from the outset; “mitigation” refers to measures taken to reduce the duration, intensity and/or extent of impacts that cannot be avoided in a feasible manner; “restoration” refers to measures taken to rehabilitate the damaged ecosystems after the exposure to impacts; while “compensation” refers to measures to compensate for the unavoidable impacts. The cooperative measures to be taken depend upon the degree of risk identified in the assessments. Such an approach should include ecological ‘red lines’ across the BRI as well as other exclusionary criteria based on international agreements China and the host country is party to.

Fifth, establish a biodiversity conservation governance and financing structure for implementing and monitoring progress towards aligning the BRI with SDG 15, and creating synergies with efforts for SDG 13 of Climate Action. As a great number of biodiversity hotspots are located in the developing world, it is difficult to depend on the design and execution of long-term projects that can only generate economic returns after many years to provide necessary conservation funds. There is thus emerging need to carry out bilateral and multilateral cooperation on biodiversity financing. Over the past decade, biodiversity financing in China and the rest of the world has been booming substantially; while rich experience has been accumulated in improving ecological compensation schemes, transfer payments to ecological function areas, and subsidies for returning farmland to forests program. Given that biodiversity conservation requires an enabling policy environment, the MEE should be charged to work with the NDRC and other administrative bodies to design biodiversity impacts mitigation strategies and to jointly design financing mechanisms for mitigation, compensation, and restoration schemes in consultation with various stakeholders in the Chinese government, host countries, and other affected parties and partners. Proper efforts should be made to create synergies between climate actions and biodiversity conservation; and facilitate effective linkage and alignment among different SDGs using Nature-based Solutions (NBS). It is suggested that China should consider a step-by-step reduction of investments in carbon-intensive industries such as coal-fired power plants and further strengthen inputs in green projects on environmental protection and renewable energy. Furthermore, China should increase the proportion of environmental aid in China’s ODA to BRI participating countries for biodiversity financing.

REFERENCES

- “Biodiversity Finance Initiative (BIOFIN).” United Nations Development Programme. No Date. https://www.id.undp.org/content/indonesia/en/home/operations/projects/environment_and_energy/win-d-hybrid-power-generation-marketing--development-initiatives-1.html.
- “Seychelles Marine Spatial Planning.” Secretariat of the Convention in Biological Diversity. 14 January 2019. <https://www.cbd.int/doc/meetings/mar/soiom-2016-01/other/soiom-2016-01-seychelles-02-en.pdf>
- “The Initiative.” Seychelles Marine Spatial Plan. No Date. <https://seymsp.com/the-initiative/>.
- “一带一路”国际合作高峰论坛咨询委员会. 2019. “一带一路”国际合作高峰论坛咨询委员会研究成果和建议报告.
- African Development Bank (AfDB) (2013), *Integrated Safeguard System: Policy Statement and Operational Safeguards*, Tunis, African Development Bank Group.
- Asian Development Bank (ADB). (2016). *Building Gender into Climate Finance: ADB Experience with Climate Investment Funds*. Manila: ADB. <https://www.adb.org/sites/default/files/publication/186020/gender-climate-finance.pdf>.
- Agarwal, Bina. (2001). “Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and a Conceptual Framework.” *World Development* 29(10): 1623-1648. [https://doi.org/10.1016/S0305-750X\(01\)00066-3](https://doi.org/10.1016/S0305-750X(01)00066-3).
- Albán, Montserrat and Sven Wunder. (2005). “Decentralized Payments for Environmental Services: The Cases of Pimampiro and PROFAFOR in Ecuador.” *Ecological Economics* 65, 685-698. <https://doi.org/10.1016/j.ecolecon.2007.11.004>.
- Ascens ão, F., Fahrig, L., Clevenger, A.P. *et al* (2018). Environmental challenges for the Belt and Road Initiative. *Nat Sustain* 1, 206–209.
- Asian Infrastructure Investment Bank (AIIB), (2019) *Environmental and Social Framework*, Beijing, AIIB.
- Bass, Margot, Matt Finer, Clinton N. Jenkins, Holger Kreft, Diego F. Cisneros-Heredia, Shawn F. McCracken, Nigel C. A. Pitman, Peter H. English, Kelly Swing, Gorky Villa, Anthony Di Fiore, Christian C. Voigt, and Thomas H. Kunz. (2010). “Global Conservation Significance of Ecuador’s Yasuní National Park.” *PLOS One* 5(1): e8767. <https://doi.org/10.1371/journal.pone.0008767>
- <https://doi.org/10.1007/s00267-017-0877-5>
- Bezombes, Lucie, St éphanie Gaucherand, Christian Kerbirou, Marie-Eve Reinart, and Thomas Spiegelberger. (2017). “Ecological Equivalence Assessment Methods: What Trade-Offs between Operationality, Scientific Basis and Comprehensiveness?” *Environmental Management* 60: 216-230. <https://doi.org/10.1007/s00267-017-0877-5>.
- Bhattacharya, A., Gallagher, K.P., Mu ñoz Cabr é M., Jeong, M., & Ma, X. (2019) *Aligning G20 Infrastructure Investment with Climate Goals and the 2030 Agenda*, Foundations 20 Platform, a report to the G20.
- Bull, Joseph W. and Niels Strange. (2018). “The Global Extent of Biodiversity Offset Implementation under no Net Loss Policies.” *Nature Sustainability* 1, 790-798. <https://doi.org/10.1038/s41893-018-0176-z>.



Bull, Joseph W., K. Blake Suttle, Ascelin Gordon, Navinder J. Singh, and E. J. Milner-Gulland. (2013). "Biodiversity Offsets in Theory and Practice." *Oryx* 47:3 (July), 369-380. <https://doi.org/10.1017/S003060531200172X>.

Burian, Gabriela, Jeffrey Seale, Matthew Warnken, Mike Scarsbrook, Hayden Montgomery, Claire Chenu, Jean-François Soussana, Mirjam Pulleman, Rob Mikkelsen, Maria Carreno Lindelien, James Dalton, Claire Warmenbol, Amy Senter, Nipun A. Bhuyan, Denis Popov, Candace Laing, Piet Van Asten, Aukje Berden, Hans Loth, Germán Canomanuel, Varun Vats, Michael Wironen, Pablo Muñoz, Ken Byrne, Dalma Somogyi, and Frank Brentrup. (2018). "Business Case for Investing in Soil Health." Geneva: World Business Council for Sustainable Development. https://docs.wbcsd.org/2018/12/The_Business_Case_for_Investing_in_Soil_Health.pdf.

China Daily, 'Beijing Call for Biodiversity Conservation and Climate Change,' *China Daily*, Wednesday, November 06, 2019.

China Development Bank and United Nations Development Program (2019), *Harmonizing Investment and Financing Standards towards Sustainable Development along the Belt and Road*, Beijing, UNDP.

Chinese Academy of Environmental Planning. (2018). "China Environmental Economic Policy Progress Annual Report: 2017." 2018.1

Clark, Robyn, James Reed, and Terry Sunderland. (2018). "Bridging funding gaps for climate and sustainable development: Pitfalls, progress and potential of private finance." *Land Use Policy* 71, 335-346. <https://doi.org/10.1016/j.landusepol.2017.12.013>.

Climate Investment Funds. (2016). *CIF Gender Action Plan – Phase 2*. Washington, D.C.: CIF. https://www.climateinvestmentfunds.org/sites/default/files/ctf_scf_decision_by_mail_cif_gender_action_plan_phase_2_final_revised.pdf.

Convention on Biological Diversity. (1992). *Convention on Biological Diversity*. <https://www.cbd.int/doc/legal/cbd-en.pdf>

Convention on Biological Diversity. (2006). "Report of the Eighth Meeting of the Parties to the Convention on Biological Diversity." Curitiba, Brazil: Conference of the Parties to the CBD. <https://www.cbd.int/doc/meetings/cop/cop-08/official/cop-08-31-en.pdf>.

Convention on Biological Diversity. (2017). *2015-2020 Gender Action Plan*. Montreal: CBD. <https://www.cbd.int/gender/action-plan/>.

Convention on Biological Diversity. (2018). "Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity, 14/15: Safeguards in biodiversity financing mechanisms." Sharm-El-Sheikh, Egypt: CBD Conference of the Parties, 17-29 November 2018. <https://www.cbd.int/doc/decisions/cop-14/cop-14-dec-15-en.pdf>.

Cornwall, Andrea. (2003). "Whose Voices? Whose Choices? Reflections on Gender and Participatory Development." *World Development* 31(8): 1325-1342. [https://doi.org/10.1016/S0305-750X\(03\)00086-X](https://doi.org/10.1016/S0305-750X(03)00086-X).

Costanza, R. et al. (2014), "Changes in the global value of ecosystem services", *Global Environmental Change*, Vol. 26, pp. 152-158.

Damania, Richard, Sébastien Desbureaux, Pasquale Lucio Scandizzo, Mehdi Mikou, Deepali Gohil, and Mohammed Said. (2019). "When Good Conservation Becomes Good Economics." Washington, DC: World Bank. <https://doi.org/10.1596/33083>.



Development Bank of Latin America (CAF) (2015), *Environmental and Social Safeguards for CAF/GEF Projects Manual*. Bogata, CAF.

Dong Zhanfeng, Li Hongxiang, Ge Chazhong, Wang Jinnan, Hao Chunxu, Cheng Cuiyun, Long Feng, Li Xiaoliang. (2018) “Environmental Economic Policy Annual Report 2017.” *Environmental Economics* 4: 12-35.

Dilllenbeck, Mark. (1994). “National Environmental Funds: A New Mechanism for Conservation Finance.” *Parks* 4:2, 39-46.

Dreher, Axel, Andreas Fuchs, Bradley Parks, Austin M. Strange, and Michael J. Tierney. 2017. *Aid, China, and Growth: Evidence from a New Global Development Finance Dataset*. AidData Working Paper #46. Williamsburg, VA: AidData at William & Mary.

Echavarría, Marta. (2002). “Financing Watershed Conservation: The FONAG Water Fund in Quito Ecuador.” In *Selling Forest Ecosystem Services: Market-Based Mechanisms for Conservation and Development*, Stefano Pagiola, Joshua Bishop, and Natasha Landell-Mills, Eds. London: Earthscan.

Ehler, Charles and Fanny Douvère. (2009). *Marine spatial planning: a step-by-step approach toward ecosystem-based management*. Paris: UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000186559>.

Equator Principles. (2020). “The Equator Principles.” <https://equator-principles.com/wp-content/uploads/2020/05/The-Equator-Principles-July-2020-v2.pdf>.

Gardner, Toby A., Amrei Von Hase, Susie Brownlie, Jonathan M. M. Ekstrom, John D. Pilgrim, Conrad E. Savy, R. T. Theo Stephens, Jo Treweek, Graham T. Ussher, Gerri Ward, and Kerry Ten Kate. (2013). “Biodiversity Offsets and the Challenge of Achieving No Net Loss.” *Conservation Biology* 27(6): 1254:1264. <https://doi.org/10.1111/cobi.12118>.

Gelcich, Stefan, Camila Vargas, Maria Jose Carreras, Juan Carlos Castilla, and C. Josh Donlan. (2017). “Achieving Biodiversity Benefits with Offsets: Research Gaps, Challenges, and Needs.” *Ambio* 46 (March), 184-189. <https://doi.org/10.1007/s13280-016-0810-9>.

Global Environment Facility. (2013). “Mainstreaming Gender at the GEF.” Washington, D.C.: GEF. https://assembly.thegef.org/sites/default/files/publications/Mainstreaming_Gender_Eng_3.pdf.

Global Environment Facility. (2018). “GEF-7 Replenishment Programming Directions.” Stockholm, Sweden: Fourth Meeting of the Seventh Replenishment of the GEF Trust Fund, April 25, 2018. https://www.thegef.org/sites/default/files/publications/GEF-7%20Programming%20Directions%20-%20GEF_R.7_19.pdf.

Global Environment Facility. (2019). “Policy on Environmental and Social Safeguards.” Washington, DC: GEF Council. https://www.thegef.org/sites/default/files/documents/gef_environmental_social_safeguards_policy.pdf.

Green Climate Fund. (2017). “Mainstreaming Gender in Green Climate Fund Projects.” Yeonsu-gu, South Korea: GCF. https://www.greenclimate.fund/sites/default/files/document/guidelines-gcf-toolkit-mainstreaming-gender_0.pdf.

Hoeksma, Bert W. (2007). “Delineation of the Indo-Malayan Centre of Maximum Marine Biodiversity: The Coral Triangle.” In Renema W. (eds) *Biogeography, Time, and Place: Distributions, Barriers, and Islands*. Topics In Geobiology, vol 29. Dordrecht: Springer. https://doi.org/10.1007/978-1-4020-6374-9_5.



Honey, Martha. (1999). *Ecotourism and Sustainable Development: Who Owns Paradise?* Washington, DC: Island Press.

Hughes, Alice (2019), Understanding and minimizing environmental impacts of the Belt and Road Initiative, *Conservation Biology*, Volume 33, No. 4, 883–894.

Huwyler, Fabian, Jürg K äppeli, Katharina Serafimova, Eric Swanson, and John Tobin. (2014). “Conservation Finance: Moving Beyond Donor Funding toward an Investor-Driven Approach.” Credit Suisse, World Wildlife Fund, and McKensey & Company.
<https://www.cbd.int/financial/privatesector/g-private-wwf.pdf>

International Finance Corporation. (2019). *Good Practice Handbook: Land Acquisition and Resettlement*. Washington, D.C.: IFC. https://www.ifc.org/wps/wcm/connect/74f457f6-ddf7-44ec-87bb-fed991b978fc/Draft_Resettlement+Handbook_Disclosure_March132019_Final.pdf.

International Finance Corporation. (2012). IFC Performance Standards, Washington, D.C.: IFC.
https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards.

International Union for the Conservation of Nature (IUCN) (2019), Issues in Brief: Biodiversity Offsets, <https://www.iucn.org/resources/issues-briefs/biodiversity-offsets>.

International Union for the Conservation of Nature (IUCN) and World Resources Institute (WRI). (2014). *A Guide to the Restoration Opportunities Assessment Methodology*. Gland, Switzerland: IUCN. <https://portals.iucn.org/library/sites/library/files/documents/2014-030.pdf>.

IPBES. 2019. Global Assessment Report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

Irwin, Amos and Kevin P. Gallagher (2013), “Chinese Mining in Latin America: a Comparative Perspective,” *Journal of Environment and Development*, 22, 2, 207-234.

Klinger, Julie Michelle. (2019). “In Their Own Time, on Their Own Terms: Improving development bank project outcomes through community-centered sustainable development partnerships in the Brazilian Amazon.” Boston University Global Development Policy Center.
<http://www.bu.edu/gdp/files/2019/05/FINALLULI-GDP.WP1-Kingler-Case-Study-short-2.19.pdf>.

Knox, John H. (2010). “The Neglected Lessons of the NAFTA Environmental Regime.” *Wake Forest Law Review* 45:391-424.

Kvam, Reidar. (2019). *Meaningful Stakeholder Engagement: A Joint Publication of the MFI Working Group on Environmental and Social Standards*. Washington, DC: Inter-American Development Bank.
<http://dx.doi.org/10.18235/0001990>.

Liu et al., (2019), Risks of Biological Invasion on the Belt and Road, *Current Biology* 29, 499–505.

Losos, Elizabeth Claire; Pfaff, Alexander; Olander, Lydia Pauline; Mason, Sara; Morgan, Seth. 2019. *Reducing Environmental Risks from Belt and Road Initiative Investments in Transportation Infrastructure (English)*. Policy Research working paper; no. WPS 8718. Washington, D.C.: World Bank Group.

Lu Haina, Liang Xiaohui, and Wang Chenping. (2018). “Improving Gender Equality Through China’s Belt and Road Initiative.” Beijing and London: British Council.
https://www.britishcouncil.cn/sites/default/files/en_final.pdf.



- Luck, G.W., K.M.A. Chan, and J.P. Fay. (2009). “Protecting ecosystem services and biodiversity in the world's watersheds.” *Conservation Letters* 2, 178-188.
- McKenney, Bruce A. and Joseph M. Kiesecker. (2010). “Policy Development for Biodiversity Offsets: A Review of Offset Frameworks.” *Environmental Management* 45, 165-176.
<https://doi.org/10.1007/s00267-009-9396-3>.
- Ministry of Finance. (2018). “Rules of Transfer Payments from the Central Government to Local Key Ecological Function Areas.” 86, 2018.6.
- Montanarella, Luca, Robert Scholes, and Anastasia Brainich, eds. (2018). *The IPBES assessment report on land degradation and restoration*. Bonn, Germany: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.
https://ipbes.net/sites/default/files/2018_ldr_full_report_book_v4_pages.pdf.
- Moser, Caroline. (1993). “Gender Planning and Development: Theory, Practice and Training.” London: Routledge.
- Narain, Divya, Martine Maron, Hoong Chen Teo, Karen Hussey, and Alex Mark Lechner. (2020). “Best-Practice Biodiversity Safeguards for Belt and Road Initiative’s Financiers.” *Nature Sustainability* 3: 650-657. <https://doi.org/10.1038/s41893-020-0528-3>.
- North American Development Bank. (2019). “North American Development Bank Annual Report, 2018.” San Antonio, TX: NADBank.
https://www.nadb.org/uploads/files/2018_annual_report_eng_final.pdf
- Palmer, Anne Shudy. (2009). “‘Pay Dirt’ Charcoal: Financing Local and Global Land Conservation with Carbon Payments for Biochar in Agricultural Soils.” Presented at the 2009 Conservation Leadership Dialogue on Conservation Capital in the Americas, Universidad Austral de Chile.
- Parker, C., Cranford, M., Oakes, N., Leggett, M. ed. (2012). *The Little Biodiversity Finance Book*. Oxford: Global Canopy Programme.
https://www.globalcanopy.org/sites/default/files/documents/resources/LittleBiodiversityFinanceBook_3rd%20edition.pdf.
- Petri, Peter and Michael Plummer (2016), *The Economic Effects of the Trans-Pacific Partnership: New Estimates*, Washington, DC, Peterson Institute for International Economics.
- Quétier, Fabien and Sandra Lavorel. (2011). “Assessing Ecological Equivalence in Biodiversity Offset Schemes: Key Issues and Solutions.” *Biological Conservation* 144(12): 2991-2999.
<https://doi.org/10.1016/j.biocon.2011.09.002>.
- Ray, Rebecca, Kevin P. Gallagher, and Cynthia Sanborn (2015), *China in Latin America: Lessons for South South Cooperation for Sustainable Development*, Global Development Policy Center, Boston University.
- Ray, Rebecca, Kevin P. Gallagher, and Cynthia Sanborn (2019), *Development Banks and Sustainability in the Andean Amazon*: London, Routledge.
- Rimarachín Cabrera, Isidro, Emma Zapata Martelo, and Verónica Vázquez García. (2001). “Gender, Rural Households, and Biodiversity in Native Mexico.” *Agriculture and Human Values* 18, 85-93.
<https://doi.org/10.1023/A:1007669132011>.



- Rocheleau, Dianne E. (1995). "Gender and Biodiversity: A Feminist Political Ecology Perspective." *Institute of Development Studies Bulletin* 26:1, 9-16. <https://doi.org/10.1111/j.1759-5436.1995.mp26001002.x>.
- Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. 2019: Sustainable Development Report 2019. New York: Bertelsman Stiftung and Sustainable Development Solutions Network (SDSN).
- Salzman, James, Genevieve Bennett, Nathaniel Carroll, Allie Goldstein, and Michael Jenkins. (2018). "The Global Status and Trends of Payments for Ecosystem Services." *Nature Sustainability* 1, 136-144. <https://doi.org/10.1038/s41893-018-0033-0>.
- Schmidt-Traub. (2020). "Learning from China to Protect Nature." *China Dialogue*, 24 March. <https://chinadialogue.net/en/nature/11921-learning-from-china-to-protect-nature/>.
- Schomers, Sarah and Bettina Matzdorf. (2013). "Payments for Ecosystem Services: A Review and Comparison of Developing and Industrialized Countries." *Ecosystem Services* 6 (December), 16-30. <https://doi.org/10.1016/j.ecoser.2013.01.002>.
- Setijo Rahajoe, Joeni, Rosichon Ubaidillah, and Ibnu Maryanto. (2017). *Indonesian Biodiversity Strategy and Action Plan (2015-2020)*. Republic of Indonesia.
- United Nations Development Programme (UNDP) and China Development Bank (CDB). (2019). "Harmonizing Investment and Financing Standards towards Sustainable Development along the Belt and Road." Working Paper. <https://www.cn.undp.org/da99c0f6-4729-4399-bf59-2aa48a4f57ad>.
- Villarrollo, Ana, Ana Cristina Barros, and Joseph Kiesecker. (2014). "Policy Development for Environmental Licensing and Biodiversity Offsets in Latin America." *PLOS ONE* 9(9): e107144. <https://doi.org/10.1371/journal.pone.0107144>.
- World Bank. (2009). *Gender in Agriculture Sourcebook*. Washington, D.C.: World Bank. <http://siteresources.worldbank.org/INTGENAGRLIVSOUBOOK/Resources/CompleteBook.pdf>.
- World Bank. (2018). *ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources*, Washington, World Bank.
- World Bank. (2010). *Safeguards and Sustainability Policies in a Changing World*. Independent Evaluation Group. Washington, D.C.: World Bank.
- World Bank. (2017). *Environmental and Social Framework*. Washington, D.C.: World Bank. <http://documents.worldbank.org/curated/en/383011492423734099/pdf/114278-WP-REVISED-PUBLIC-Environmental-and-Social-Framework.pdf>.
- World Bank. (2019). *Belt and Road Economics: Opportunities and Risks of Transport Corridors*. Washington, D.C.: World Bank.
- World Bank. (2020). "Annual Report 2020: Ending Poverty, Investing in Opportunity." Washington, DC: World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/32333/9781464814709.pdf>.
- World Wildlife Fund for Nature (2018), *Belt and Road Initiative: WWF Recommendations and Spatial Analysis*, Beijing, World Wildlife Fund Briefing Paper.
- Xi, Jinping. (2017). "Work Together to Build the Silk Road Economic Belt and The 21st Century Maritime Silk Road." Opening Ceremony Speech of the Belt and Road Forum for International



Cooperation, 14 May. *Quishi Journal* 9(3):32. http://english.qstheory.cn/2017-09/01/c_1121522255.htm.

Yoshino, Naoyuki & Abidhadjaev, Umid, (2016) *Impact of Infrastructure Investment on Tax: Estimating Spillover Effects of the Kyushu High-Speed Rail Line in Japan on Regional Tax Revenue*, ADBI Working Papers 574, Asian Development Bank Institute.

Yuan, Fei and Kevin P. Gallagher (2017), “Standardizing Sustainable Development: Comparing Development Banks in the Americas,” *Journal of Environment and Development* Volume: 26 issue: 3, page(s): 243-271.

中华人民共和国生态环境部. 中国履行《生物多样性公约》第六次国家报告. 2019

中国商务部. “一带一路”经贸合作取得新发展新提高新突破. <http://www.mofcom.gov.cn/article/ae/ai/202001/20200102928961.shtml> [2020-01-09]

图解：“一带一路”倡议六年成绩单. 2019. 中国一带一路网. <https://www.yidaiyilu.gov.cn/xwzx/gnxw/102792.htm> [2020-01-09]

数据来源：生态环境部环境规划院，中国环境经济政策进展年度报告：2017，2018.1；财政部网站

数据来源：董战峰,李红祥*,葛察忠,王金南,郝春旭,程翠云,龙凤、李晓亮.环境经济政策年度报告 2017,环境经济, 2018,4: 12-35；财政部，《中央对地方重点生态功能区转移支付办法》（财预〔2018〕86号），2018.6

“中国 TNC 与浙江龙坞合作开展水源地保护项目.” <http://www.tnc.org.cn/#News#schedule#iframe99dc279553caa331d70c9f0840779587b1f0c4fddb7a32175cd9319c7a817b5db938ef981a6ed605397fb1> [2020-01-20]

刘礼文：“创新业务新模式 万向信托推出全国首个水基金信托.” <http://biz.zjol.com.cn/system/2015/11/18/020917870.shtml> [2015-11-18]

ANNEXS

Annex 1: Supporting Evidence for Chapter 1

Table A1-1 Geographic Distribution of Countries that have Signed BRI Memorandums of Understanding

Region	BRI Countries
East Asia	China, Mongolia
ASEAN countries (10 countries)	Singapore, Malaysia, Indonesia, Myanmar, Thailand, Laos, Cambodia, Viet Nam, Brunei, Philippines
West Asia (18 countries)	Iran, Iraq, Turkey, Syria, Jordan, Lebanon, Israel, Palestine, Saudi Arabia, Yemen, Oman, UAE, Qatar, Kuwait, Bahrain, Greece, Cyprus, and Sinai Peninsula of Egypt
South Asia (8 countries)	India, Pakistan, Bangladesh, Afghanistan, Sri Lanka, Maldives, Nepal, Bhutan
Central Asia (5 countries)	Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan, Kyrgyzstan
Commonwealth of Independent States (7 countries)	Russia, Ukraine, Belarus, Georgia, Azerbaijan, Armenia, Moldova
Central and Eastern Europe (16 countries)	Poland, Lithuania, Estonia, Latvia, Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Albania, Romania, Bulgaria, Macedonia
Western Europe (7 countries)	Austria, Finland, France, Italy, Luxembourg, Malta, Portugal
North Africa (5 countries)	Algeria, Libya, Mauritania, Morocco, Tunisia
West Africa (11 countries)	Cabo Verde, Cote d'Ivoire, The Gambia, Ghana Guinea, Liberia, Mali, Nigeria, Senegal, Sierra Leone, Togo
Central and Southern Africa (8 countries)	Angola, Cameroon, Chad, Republic of Congo, Equatorial Guinea, Gabon, Namibia, South Africa
East Africa (15 countries)	Burundi, Djibouti, Ethiopia, Kenya, Madagascar, Mozambique, Rwanda, Seychelles, Somalia, South Sudan, Sudan, Tanzania, Uganda, Zambia, Zimbabwe
Latin America (11 countries)	Bolivia, Chile, Costa Rica, Ecuador, El Salvador, Guyana, Panama, Peru, Suriname, Uruguay, Venezuela
Caribbean (8 countries)	Antigua and Barbuda, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Jamaica, Trinidad and Tobago
Oceania (9 countries)	Fiji, Kiribati, Micronesia, New Zealand, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu

Note: Timor-Leste is currently in the process of ASEAN accession.

Table A1-2. The state of BRI countries in implementing SDG 15

Region	Country	Goal 15 Implementation	Goal 15 Trend	Region	Country	Goal 15 Implementation	Goal 15 Trend	
East Asia	China	Orange	→	West Asia	Bahrain	Orange	.	
	Mongolia	Yellow	↗		Lebanon	Orange	→	
	Korea, Dem. Rep.	Orange	→		Qatar	Yellow	.	
ASEAN	Singapore	Orange	.		Iran	Yellow	↓	
	Indonesia	Red	↓		Egypt	Yellow	→	
	Malaysia	Red	→		Cyprus	Yellow	.	
	Cambodia	Orange	↓		Greece	Yellow	↗	
	Vietnam	Red	↗		Jordan	Grey	.	
	Myanmar	Orange	↓		Montenegro	Red	↓	
	Lao P. D. R.	Orange	↓		Serbia	Orange	↗	
	Philippines	Orange	↓	Bosnia and Herz.	Orange	→		
	Thailand	Orange	→	N. Macedonia	Yellow	↗		
	Timor-Leste	Yellow	.	Croatia	Yellow	↗		
South Asia	Maldives	Orange	.	Central and Eastern Europe	Albania	Yellow	↗	
	India	Orange	↓		Slovenia	Yellow	↑	
	Afghanistan	Red	↓		Romania	Green	↑	
	Bhutan	Orange	→		Slovakia	Yellow	↑	
	Bangladesh	Orange	↓		Hungary	Green	↑	
	Sri Lanka	Orange	↗		Lithuania	Yellow	↑	
	Pakistan	Yellow	↓		Estonia	Yellow	↑	
	Nepal	Orange	→		Czech Republic	Yellow	↑	
	Central Asia	Turkmenistan	Orange		→	Poland	Green	↑
Kazakhstan		Orange	→		Latvia	Yellow	↑	
Uzbekistan		Orange	→	Bulgaria	Green	↑		
Kyrgyzstan		Orange	→	Comm. of Indep. States	Georgia	Orange	→	
Tajikistan		Orange	→		Armenia	Orange	↓	
West Asia	Iraq	Red	→		Ukraine	Orange	→	
	Kuwait	Orange	.		Moldova	Orange	→	
	United Arab Emir.	Orange	.		Russian.	Orange	→	
	Saudi Arabia	Orange	→		Azerbaijan	Yellow	→	
	Syria	Red	→		Belarus	Yellow	↑	
	Israel	Orange	↓		Western Europe	Luxembourg	Orange	↗
	Yemen	Orange	↓			Malta	Orange	.
	Oman	Orange	.			Austria	Yellow	↗
	Turkey	Red	→	Portugal		Yellow	↗	

Table A1-2, continued: The state of BRI countries in implementing SDG 15

Region	Country	Goal 15 Implemen- tation	Goal 15 Trend	Region	Country	Goal 15 Implemen- tation	Goal 15 Trend	
Western Europe	France		↗	West Africa	Senegal		.	
	Finland		↑		The Gambia		.	
	Italy		↑		Ghana		.	
North Africa	Algeria		→		Cote d'Ivoire		↗	
	Tunisia		↗		Nigeria		↗	
	Mauritania		.		Guinea		↗	
	Morocco		→		Togo		.	
	Libya		.		Latin America	Uruguay		↓
East Africa	Djibouti		↓			Panama		.
	Madagascar		→			Chile		↓
	Ethiopia		→	Guyana			.	
	Tanzania		→	Ecuador			→	
	Kenya		↓	El Salvador			→	
	Sudan		↗	Costa Rica			.	
	Rwanda		→	Peru			.	
	Mozambique		→	Suriname			↗	
	Uganda		↗	Bolivia			↗	
	Zambia		→	Venezuela			↗	
	Burundi		↑	Caribbean		Jamaica		.
	Zimbabwe		↗			Trin. & Tobago		.
	Seychelles		.			Cuba		.
Somalia		→	Dominican Rep.			↗		
South Sudan		↗	Antigua & Barb.			.		
Central and Southern Africa	South Africa		↗		Barbados		.	
	Angola		→		Dominica		.	
	Cameroon		→		Grenada		.	
	Chad		↑		Oceania	Fiji		↓
	Gabon		↑			Vanuatu		.
	Namibia		↑	New Zealand			↓	
	Congo, Republic		↑	P.N.G.			.	
Equatorial Guinea		.	Kiribati			.		
West Africa	Liberia		→	Micronesia			.	
	Cabo Verde		.	Samoa			.	
	Sierra Leone		↑	Solomon Isl.			.	
	Mali		→	Tonga			.	

Table A1-2, continued: Legend
Colors

Green	Goal Achievement
Yellow	Challenges Remain
Orange	Significant Challenges
Red	Major Challenges






Trend Arrows







↑	On track or Maintaining Achievement
↗	Moderately Increasing
→	Stagnating
↓	Decreasing

Annex 2: Supporting Evidence for Chapter 2

Table A2-1. Assessment of China's progress in implementing SDG 15

SDG15	Main work undertaken by China to achieve SDGs	Indicators	Overall assessments and trends
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Safeguarding the ecological water level of important wetlands and estuaries, protecting and restoring wetland and river and lake ecosystems, establishing systems of wetland protection and degraded wetland protection and restoration, and promoting the rational use of wetlands; promoting the development of the legal system of terrestrial nature reserves and improving the level of protection and utilization of natural resources such as forests; and conducting river and lake health assessments to protect aquatic ecosystems.	National-level protected areas for aquatic germplasm resources	●
		Number of wetland parks	●
		Percentage of surface water bodies with good quality meeting Classes I-III standards	●
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Carrying out large-scale land greening, strengthening the implementation of key afforestation projects, improving the natural forest protection system, comprehensively stopping commercial forest logging, and protecting and cultivating forest ecosystems; improving the policy of returning farmlands to forests and grasslands, and exploring the establishment of mechanisms for government-sponsored social services to carry out afforestation and forest protection.	Total forest stock	●
		Area of natural forests	●
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Participating in demonstration projects aiming at land degradation neutrality goal under the United Nations Convention to Combat Desertification; promoting the comprehensive control of desertification, rocky desertification and soil erosion, preventing land degradation, continuously expanding the scope of desertification land management, and strengthening the ecological protection and construction of desert areas.	Forest stock in key ecological project areas	●
		Grassland vegetation cover rate in key ecological project areas	●
		Area of desertified land	●
15.4 By 2030, ensure the conservation of	Comprehensively improving the stability of mountain ecosystems	Number and area of forest parks	●

mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development	and ecological service functions and building an ecological security barrier; constructing national forest germplasm resource banks and establishing a system of standardized germplasm resource conservation; scientifically optimizing the forest park management system and promoting the sharing and utilization of forest diversity resources.	Total timber standing stock	
		Area of natural forests	
		National investments in ecological conservation	
15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Implementing major projects for biodiversity conservation; strengthening the construction and management of nature reserves, and increasing the protection of typical ecosystems, species, genes and landscape diversity; increasing the investment in ecosystem protection and restoration and carrying out large-scale survey of baselines for species resources in the country; and establishing a national biodiversity observation network.	Red List Index	
		Living Planet Index	
15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed	Gradually establishing and improving laws and regulations on the protection and benefit sharing of genetic resources and promoting the proper access to genetic resources and the fair and equitable sharing and utilization; increasing funding for the conservation of biological genetic resources and participating in international cooperation in access to and use of genetic resources.	Indicators related to access to genetic resources and benefit-sharing	o o o
15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products	Seriously implementing the Wild Animal Protection Law and speeding up the improvement of the National List of Key Protected Wild Animals; optimizing the national wildlife protection network, strengthening the import and export management of wild animals and plants, and cracking down on illegal trade in wild animal and plant products such as ivory; restoring and expanding the habitats of endangered wildlife and promoting international cooperation in wildlife conservation.	/	/

15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	Actively participating in international conventions related to the prevention and control of invasive alien species; improving the list of IAS and related risk assessments	Number of newly discovered IAS every decade	
		Batches and number of species of harmful pests intercepted at ports	
		Number of IAS risk assessment standards released.	
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	Requiring governments of all levels to undertake ecological conservation and biodiversity conservation taking into account their local circumstances, and to incorporate biodiversity into their long-term and medium term development planning.	Number of sectoral policies related to conservation and sustainable use of biodiversity	
15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	Strengthening coordination and increasing funds needed for infrastructure and capacity building	National investments in ecological conservation	
15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation	Promoting diversified resource mobilization strategies, guiding enterprises and the public to participate more deeply, and forming a long-term financial mechanism for forest management; helping other developing countries to carry out technical training under the framework of South-South cooperation to improve the rate of utilization of forest resources and the level of forest management; and guiding Chinese companies to carry out sustainable forest management and business operation abroad.	Ecological compensation for forest ecological benefits	
15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities	Strengthening the review of trade in species restricted by the international trade conventions in which China participates, and strictly managing the certification under the Convention on International Trade in Endangered Species of Wild Fauna and Flora; carrying out special actions to curb the criminal momentum of poaching and illegal trade of wild animals; and encouraging and guiding the development of wild	Number of illegally smuggled or trafficked protected species intercepted or detected	o o o

	plant artificial cultivation industry.		
--	----------------------------------------	--	--



Status improving



Status worsening;

○ ○ ○ no adequate data

/ no indicators available for assessment

Note: China's Sixth National Report on Implementation of the Convention on Biological Diversity. 2018

Table A2-4: Operational Requirements for Biodiversity Safeguards Applied by DFIs to Clients

	ADB	AfD B	AIIB	BND ES	CA F	EBR D	EIB	IADB	IF C	KF W	WB
Screen and categorize projects for level of impact and risk to biodiversity	X	X	X	X	X	X	X	X	X	X	X
Assess baseline conditions	X	X	X		X	X	X	X	X		X
Assess direct, Indirect, cumulative and Induced impacts and risks to biological resources	X	X	X		X	X	X	X	X		X
Consider trans-boundary Impacts	X	X	X			X	X	X	X		X
Socio-economic impacts of modifications to biodiversity	X	X	X		X	X	X	X	X	X	X
Use of strategic environmental assessment	X	X	X				X	X	X		X
Apply the precautionary approach or principle	X		X		X	X	X	X		X	X
Examine alternatives to project design technology and components	X	X	X		X	X	X	X	X		X
Explicitly incorporate costs of environmental mitigation measures into environmental assessment					X			X			
Apply mitigation hierarchy		X	X	X		X	X	X	X		X
Explicit adherence to national law and host country international commitments	X	X	X	X	X	X	X	X	X		X
Option to use country and/or client systems in lieu of DFI safeguards	X		X					X			X
Engage independent experts and advisory panels		X	X			X					X
Carry out stakeholder consultation during environmental assessment and project implementation	X	X	X		X	X	X	X	X	X	X
Require client to disclose environmental assessments and management plans	X	X	X			X	X		X		X

Table A2-4, continued: Operational Requirements for Biodiversity Safeguards Applied by DFIs to Clients

	ADB	AFD B	AIIB	BNDES	CAF	EBRD	EIB	IADB	IFC	KFW	WB
Prepare Biodiversity Management or action plans			X			X	X				
Enhance Biodiversity	X	X	X		X	X	X		X		X
Use adaptive management procedures to address unanticipated impacts			X				X				
Criteria for Projects in/affecting Critical Habitat	X	X	X		X	X	X	X	X		X
Criteria for Projects in/affecting legally protected and internationally recognized areas	X	X	X	X	X	X	X		X		X
Criteria for Projects in/affecting natural habitat	X	X	X		X	X	X		X		X
Criteria for Projects in/affecting modified habitat	X				X		X		X		X
Use of Offsets	X		X			X	X		X		X
Management of Ecosystem Services		X			X	X	X		X		X
Sustainable management of natural Living and renewable resources	X	X			X	X	X		X		X
Control of Invasive Alien Species	X	X	X			X	X		X		X
Genetically Engineered Organisms		X				X					
Environmental Flows		X									
Forest Management		X	X		X					X	
Marine Environment		X	X			X				X	
Protection of Indigenous Knowledge and commercial activities		X			X				X	X	X
Supply Chain Management		X				X	X		X		X
Impact of Climate Change on Biodiversity		X				X	X				
List of Categorically Ineligible Projects	X	X		X	X	X	X	X	X	X	X

Source: Web pages, official policies, and interviews with individuals at listed international institutions.



Annex 3: Evidence from Chapter 3

Detailed descriptions of conservation finance initiatives in China

Increasing transfer payments to ecological function areas. Since 2018 when the central government established the transfer payment system for key national ecological function areas, China has been intensifying the efforts to protect those areas. In 2018, the state made a transfer payment of 72.1 billion yuan to key national ecological function areas, 9.4 billion more than it did the previous year, registering an increase of 15%. Meanwhile, China has kept expanding the scope of key national ecological function areas. Once included in the scope, the area will receive financial and policy support as long as it strictly implements the negative list system for industrial access. According to relevant regulations, a region counted as a key national ecological function area needs to strengthen ecological protection and restoration, regulate the boundaries of industrialization and urbanization, and enhance the supply capacity of eco-products.

Strengthening fiscal support from the central government to forestry ecological protection. On July 27, 2018, the Ministry of Finance and the State Administration of Forestry and Grassland jointly issued the *Management Measures for Forestry Ecological Protection and Recovery Funds*, aiming at regulating the management of Forestry Ecological Protection and Recovery Funds, coordinating the integrated use of such funds, improving the efficiency of utilization and facilitating forestry ecological protection and recovery. According to the *Measures*, Forestry Ecological Protection and Recovery Funds refer to special transfer payment funds in the central budget for the social insurance and social expenditure of Natural Forest Protection Project (hereinafter referred to as “NFPP”), the cessation of commercial clear-cutting of natural forest, improving relevant policies on returning farmland to forestry and initiating a new round of returning farmland to forestry and grassland. In 2018, a total of 41.604 billion yuan was allocated to several provinces, of which Heilongjiang received the most, 8.595 billion. The *Measures* has clearly stated that the funds are allocated based on the factor method. The standard of cash subsidy for returning farmland to forestry is as follows: for the Yangtze River Basin and southern areas, 125 yuan per mu each year; for the Yellow River Basin and northern areas, 90 yuan per mu each year. Those returned eco-forests will be subsidized for 8 years, and those returned economic forests for 5 years. As for the new round of returning farmland to forestry and grassland, the returned forests will receive a cash subsidy of 1200 yuan per mu, paid at 3 intervals within 5 years, with 500 yuan in the first year, 300 yuan in the second year, and 400 in the third year; the returned grasslands will receive a cash subsidy of 850 yuan, paid at 2 intervals within 3 years, with 450 yuan in the first year and 400 yuan in the second.

Strengthen fiscal support from the central government to ecological protection and restoration of wetlands. From 2013 to 2016, the central government allocated 5 billion yuan to protect wetlands in China, and continued to provide support through the Funds for Reform and Development of Forestry afterwards. The measures taken include: First, supporting the protection and restoration of wetlands. For wetlands of international/national importance, national wetland parks at important ecological locations, and national wetland nature reserves at or above the provincial level managed by the forestry system, efforts will be made to protect and restore the wetlands, improve the current ecological status, and maintain the health of the local eco-system. Second, supporting returning farmland to wetland. It is encouraged to return farmlands to wetlands within the wetlands of international importance, national wetland nature reserves, and provincial nature reserves within wetlands of national importance managed by the forestry system, so as to expand the area of wetlands and improve the surrounding ecological status. Third, supporting the wetland ecological benefit compensation. For important wetlands on the route of migratory birds managed by the forestry system, their loss due to the protection of birds and other wild animals will be properly compensated. In so doing, all parties are motivated to protect wetlands and maintain the wetlands’ ecosystem service functions.



Promote the grassland ecological protection subsidy incentive policy continuously. Since 2011 when the state implemented the grassland ecological protection subsidy incentive policy in 8 major pastoral areas in Inner Mongolia, Xinjiang, Tibet, Qinghai, Sichuan, Gansu, Ningxia and Yunnan and Xinjiang Production and Construction Corps, and gave out a total of 13.6 billion yuan as subsidies, 36 pastoral and agricultural pastoral regions in 5 non-major pastoral provinces including Heilongjiang have been added to the scope, altogether covering 268 pastoral and mixed farming-pastoral counties. In recent years, the state together with the General Bureau of Land Reclamation of Heilongjiang has implemented the grassland subsidy incentive in 13 provinces including Shanxi and Hebei and production and construction corps, achieving remarkable results in improving the grassland ecosystem, the production of animal husbandry and the life of herders. In 2018, a new round of grassland ecological protection subsidy incentive of 18.76 billion yuan was included in the central budget to support the banned grazing area of 1.206 billion mu and the grass-animal balance area of 2.605 billion mu, and award those regions with outstanding performance. The funds were utilized by local governments in grassland management and the transformation and upgrading of the production mode. Besides, the subsidies for banning grazing and incentive for grass-animal balance were required to be given out based on the principle of “to clear targets in a reasonable amount accurately”, making sure each target could get their share in time. The distribution of the funds is publicized at the village-level, accepting surveillance by the masses. In addition to supporting the implementation of subsidies for banning grazing and incentives for grass-animal balance, the performance appraisal also requires no less than 70% of the funds should be used in protecting the grassland ecosystem and developing grass-based livestock husbandry, that relevant trails should be conducted in accordance with local realities, and that support to new agricultural operators should be enhanced concerning the development of modern grass-based livestock husbandry.

Launching pilot programs on the unified confirmation and registration of natural resources. The confirmation and registration of natural resources is important to promoting the reform of the property right mechanism of natural resource assets, which, is a key part of China’s ecological civilization construction. On July 6, 2018, an evaluation and acceptance meeting for the pilot programs concerning the unified confirmation and registration of natural resources was held in Beijing by seven ministries and commissions, including the Ministry of Natural Resources. At the meeting, pilot programs of several provinces, municipalities and autonomous regions passed the acceptance, indicating that much progress has been made in the field of confirmation and registration of natural resources after over one year’s hard work. By the end of October in 2018, 1191 natural resource registration units have been established in 12 provinces and 32 pilot areas, and the total registered area has reached 186,727 km². Besides, the state also focused on exploring the confirmation and registration of national parks, wetlands, water flows, proven reserves of mineral resources. On the basis of real estate registration, with the core mission being making a clear distinction between national ownership and collective ownership, between national ownership and governments at different levels assuming ownership, between different collective owners, and between different types of natural resources, and bearing in mind the goal of adopting a holistic approach to conserving our mountains, rivers, forests, farmlands, lakes and grasslands, local governments completed the work on investigating resource ownership, establishing registration units, confirming and registering, constructing databases, etc., resulting an effective set of workflow, technical methods and specifications. Starting from the end of 2018, the confirmation and registration of natural resources in key areas has been implemented nationwide step by step. It is planned that within 5 years, the unified confirmation and registration of natural resources in nature reserves will completed, such as national and provincial key parks, natural reserves and various natural parks (scenic spots, wetland parks, natural heritage, geoparks, etc.). At the same time, the unified confirmation and registration of individual natural resources with complete ecological functions owned by the public will be conducted, such as major rivers and lakes, key wetlands, key national forests, important grasslands, etc.



Annex 4: Evidence from Chapter 4

4.1 China's Policy Implementation for Biodiversity Conservation

In regard of biodiversity conservation policies, we've already had relevant legislation, technological innovation and international mechanisms in China. A preliminary legal framework for biodiversity conservation has been established, and technological innovation and international collaboration are making continuous progress.

The most important elements include:

- The *Constitution*, which establishes the fundamental law of the state
- National laws and regulations, including the *Marine Environment Protection Law*, *Water Law*, *Water Pollution Prevention and Control Law*, *Water and Soil Conservation Law*, *Fishery Law*, *Forest Law*, *Grassland Law*, *Wild Animal Conservation Law*, *Regulations on Wild Plants Protection*, *Regulations on the Protection of Terrestrial Wild Animals*, *Regulations on the Protection of New Varieties of Plants*, *Regulations on Nature Reserves*, and *Regulations on the Administration of Scenic and Historic Area*
- Nine provinces have established regulations, including *Regulations on the Protection of Wetlands in Heilongjiang Province*, *Regulations on the Protection of Wetlands in Gansu Province*, and *Regulations on the Protection of Wetlands in Poyang Lake in Jiangxi Province*
- International conventions, including the *Convention on Biological Diversity*, *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*, *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, *Convention Concerning the Protection of the World Cultural and Natural Heritage*, *Declaration of the United Nations Conference on the Human Environment*, and *Rio Declaration on Environment and Development*
- Judicial measures established through the Supreme People's Court of China, which has organized a division for environmental resources and issued guidelines for biodiversity-related cases.
- Government-sponsored survey, research, and monitoring of biodiversity, producing species catalogs such as the *Flora of China*, *Fauna of China*, *Cryptogamia of China*, *China Red Data Book of Endangered Animals*, and others.
- Public awareness campaigns, both domestically and internationally.

4.2 Elements of China's Governance Framework for Conservation

In China, we have the *Constitution*, the fundamental law of the state, the *Environmental Protection Law of the People's Republic of China*, the basis of the environmental law system, and a set of separate laws and administrative regulations on biodiversity conservation issued on the spirit of the above laws, such as the *Marine Environment Protection Law*, *Water Law*, *Water Pollution Prevention and Control Law*, *Water and Soil Conservation Law*, *Fishery Law*, *Forest Law*, *Grassland Law*, *Wild Animal Conservation Law*, *Regulations on Wild Plants Protection*, *Regulations on the Protection of Terrestrial Wild Animals*, *Regulations on the Protection of New Varieties of Plants*, *Regulations on Nature Reserves*, and *Regulations on the Administration of Scenic and Historic Areas*. Besides, we also have local regulations on biodiversity conservation, for instance, the *Regulations on the Protection of Wild Aquatic Animals*, the *Aquatic Resources Breeding Protection Regulations*, *Law on the Exclusive Economic Zone and the Continental Shelf*, and the *Regulations on the Protection of Fishery Resources Breeding of Bohai*. Administrative regulations on biodiversity conservation in wetlands include the *Ramsar Convention*, *Convention on Biological Diversity*, etc.

In terms of local legislation, 9 provinces have established relevant regulations, including the *Regulations on the Protection of Wetlands in Heilongjiang Province*, *Regulations on the Protection of Wetlands in Gansu Province*, and *Regulations on the Protection of Wetlands in Poyang Lake in Jiangxi Province*. In addition, a series of administrative laws and regulations have been issued,



including regulations on nature reserves, regulations on the protection of wild plants, regulations on the safety management of agricultural GMOs, regulations on the administration of the import and export of endangered wild flora and fauna, regulations on the protection of wild medicine resources, etc. Some provincial governments and relevant authorities in charge have also formulated corresponding rules and regulations.

China has joined several international conventions related to biodiversity conservation, including the *Convention on Biological Diversity*, *Convention on Wetlands of International Importance Especially as Waterfowl Habitat*, *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, *Convention Concerning the Protection of the World Cultural and Natural Heritage*, *Declaration of the United Nations Conference on the Human Environment*, and *Rio Declaration on Environment and Development*. Laws concerning the management of introduced species include the *Law on the Entry and Exit Animal and Plant Quarantine*, *Animal Epidemic Prevention Law*, *Marine Environment Protection Law*, *Regulations on the Prevention of Livestock Epidemics*, etc. As for the emerging safety issues concerning GMOs, the State Council has issued the *Regulations on Administration of Agricultural Genetically Modified Organisms Safety* in 2001. The promulgation of those laws and regulations has efficiently supervised and promoted the conservation of biodiversity in China.

The Supreme People's Court of China has set up a division for environmental resources and issued guidelines on conducting specialized investigations and trials of biodiversity conservation-related cases, so as to guide courts at all levels to classify cases based on different basins or eco-function areas, unify judicial criteria, and improve the multiple-channel dispute settlement mechanism, thus laying a solid foundation for enhancing the juridical protection of environmental resources including biodiversity. Chinese courts give full play to the role of environmental public litigation, trying public interest litigation cases concerning wetlands, forestry, endangered plants, migratory birds in accordance with relevant laws. In the ancient Wucheng Town of Yongxiu County near Poyang Lake, the first biodiversity judicial protection base has been established. Adhering to modern judicial concepts such as strict law enforcement, safeguarding rights and interests, focusing on prevention and restoration and encouraging public participation, the base aims to make the best of judicial services in the process of advancing ecological civilization construction through circuit courts and legal publicity.

Basic surveys, scientific researches and monitoring of biodiversity have been conducted, and technological innovation has been applied to promote the sustainable development of biodiversity. Relevant departments have organized a series of national and regional surveys, researches and monitoring on species and established corresponding databases, and have published several species catalogues such as the *Flora of China*, *Fauna of China*, *Cryptogamia of China*, *China Red Data Book of Endangered Animals*, etc. China has also drawn on international advanced experience and carried out demonstration projects, strengthened researches on the evaluation and management system of biological genetic resources, and tried to build a mechanism to communicate relevant traditional knowledge and share benefits, thus coordinating the relationship among knowledge protection, expansion and utilization.

China has raised public awareness to participate, and strengthened international cooperation and exchanges. Publicity campaigns on biodiversity conservation in various forms have been launched, and education in this regard has also been enhanced in the campus. Public monitoring and reporting systems for biodiversity conservation have been established and improved. Partnerships on biodiversity conservation have been built in order to give full play to the role of non-governmental non-profit organizations and philanthropic organizations, and mobilize stakeholders both in and out of China to promote the sustainable use of biodiversity resources. Moreover, China always sticks to its commitment to those conventions, introduces advanced experience from abroad, and actively participates in formulating relevant international rules.

4.3 Additional Major Institutions with Conservation Management Responsibilities in China



The *China Biodiversity Conservation and Green Development Foundation (CBCGDF)* is a leading nationwide non-profit public foundation and a social legal entity dedicated to biodiversity conservation and green development. The mission of CBCGDF is to mobilize the whole society to care about biodiversity conservation and support the cause of green development, protect strategic resources of the state, promote sustainable economic and social development, promote the construction of ecological civilization and achieve harmony between man and nature, thus building a better home for mankind.

In 2010, the General Assembly of the United Nations declared 2011 – 2020 the United Nations Decade on Biodiversity. The State Council established the *National Committee for 2010 International Year of Biodiversity*, and held a meeting on which they passed the China Action Plan for 2010 International Year of Biodiversity and China National Biodiversity Conservation Strategy and Action Plan (2011 – 2030). In the June of 2011, the State Council decided to change the name of the Committee to “China National Committee for Biodiversity Conservation”, and it will continue to coordinate the efforts to protect biodiversity and guide China’s action plan for the UN Decade on Biodiversity.

In 1992, the *Biodiversity Committee of the Chinese Academy of Sciences (BC-CAS)* was established to coordinate researches on biodiversity. Its responsibilities are as follows: to make biodiversity research policies of CAS; to make a long-term guideline and work plan for CAS’s biodiversity researches; to review the rules and regulations on observation and experiments, organizational management mechanisms, and fund allocation plans; to inspect the utilization of funds and the performance of work; to review academic exchanges and training programs; to make plans for domestic and international collaborative researches. BC-CAS will strive to implement the sub-project of “Biodiversity Research and Information Management”, an environmental technical assistance project with loans from the World Bank. So far, 30+ databases have been established, 25 of which contain over 140,000 records that can be accessed via Internet.

4.4 DFIs Governance Structures for Conservation

- European Bank for Reconstruction and Development (EBRD): Borrowers are tasked with overseeing all management, monitoring, and reporting.
- International Finance Corporation (IFC): IFC works with private-sector borrowers, creating a triangular oversight relationship: IFC, client, and client’s national government. Clients are generally tasked with monitoring and reporting, except for situations where national governments have domain over a natural resource or oversight responsibilities. In complex or high-risk scenarios, clients will be required to use the services of outside experts.
- Asian Infrastructure Investment Bank (AIIB) and Development Bank of Latin America (CAF): Borrowers are tasked with monitoring and reporting. The DFI may also carry out periodic site visits and works with implementers to mitigate any harm that has been caused.
- KfW agrees to a monitoring and reporting plan with the borrower or client, who is then empowered to manage that plan.
- Asian Development Bank (ADB): Borrowers compile regular reports, while the ADB maintains responsibility for due diligence in reviewing these reports. The ADB also carries out periodic site visits and works with implementers to mitigate any harm that have been caused.
- African Development Bank (AfDB): The AfDB will occasionally carry out independent audits of projects with substantial risks to biodiversity, including the use of third-party auditors. In cases where problems come to light, it designs action plans with measurable outcomes in conjunction with the borrower, with the aim of strengthening local capacity to monitor and manage projects and mitigate harm.
- Inter-American Development Bank (IADB) and World Bank (WB): These DFIs monitor compliance and oversee reporting.

Table A4-1 Commonalities Among DFI Guidelines for Project-Level Grievance Mechanisms

	AfDB	ADB	AIIB	EBRD	EIB	IFC	KfW	WB
<i>Institutional Location</i>								
It should be independent and monitored by a 3 rd party	X							
It may be internal or external, as the DFI deems suitable			X					
<i>Resources</i>								
It should be scaled to the risks and impacts of the project		X	X	X	X	X	X	X
It should be adequately budgeted and staffed					X			
<i>Design and establishment</i>								
It should be designed in cooperation with the borrower/client to ensure legitimacy, accessibility, predictability, and equitability	X							
It should be established as early as possible in the project development process				X				
<i>Process</i>								
It should address affected people's concerns promptly	X	X		X	X	X		
It should use a clear and transparent process		X	X	X	X	X		
It should have a predictable process	X				X			
It should be gender responsive or sensitive		X	X					
It should be culturally appropriate		X	X	X		X	X	
It should be free from manipulation, coercion, or interference				X				
It should have a publicly accessible register of cases and outcomes	X		X					
It should report regularly to the public on its implementation				X	X			



Table A4-1, continued: Commonalities Among DFI Guidelines for Project-Level Grievance Mechanisms

	AfDB	ADB	AIIB	EBRD	EIB	IFC	KfW	WB
<i>Treatment of complainants</i>								
It should protect complainants from intimidation/retaliation			X	X		X		
It should allow complainants to be remain anonymous if requested			X		X			
It should be free of cost to stakeholders	X				X	X		
It should be readily accessible to all segments of affected people		X	X					
The client should inform stakeholders of its availability			X	X		X		

Note: AfDB: African Development Bank; ADB: Asian Development Bank; AIIB: Asian Infrastructure Investment Bank; EBRD: European Bank for Reconstruction and Development; EIB: European Investment Bank; IFC: International Finance Corporation; KfW: German development bank, originally Kreditanstalt für Wiederaufbau; WB: World Bank.