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Executive Summary

To reverse the global trend of ecological destruction and biodiversity loss, many countries in the world have adopted the Convention on Biological Diversity (CBD) that was opened for signature in 1992 and planned to take collective measures to protect the global ecological environment and biodiversity. It was followed by the Strategic Plan for Biodiversity 2011–2020, issued at the 10th Conference of the parties to the CBD (Cop 10) in Aichi, Japan, which provides 20 targets to halt the loss of biodiversity for the next decade, namely "Aichi targets". In this context, maximizing the mobilization of financial resources by developing ecological conservation finance that supports ecological conservation and biodiversity conservation has become a global concern.

International practice in ecological protection finance has recently developed rapidly, and there are many innovative models devised to mobilize public and private resources. But it also faces many challenges. First, the funding gap for global ecological conservation remains huge. The limited scale of public funds for ecological conservation undermines the implementation of biodiversity conservation measures in various fields. Second, flows of capital to ecological protection have yet to materialize. Ecological protection (restoration) activities are characterized by large-scale investment, long payback periods, and huge externalities. The externalities of biodiversity conservation projects are even more extensive, involving more individuals and more complex situations, and the environmental benefits are more difficult to measure. At present, financial institutions and large institutional investors generally pay insufficient attention to the protection of ecology and biodiversity, and lack the necessary professional ability to identify the benefits and risks of projects in the process of investment and financing. If we do not defund ecologically harmful activities, ecological protection finance will be unable to fundamentally reverse the current trend of ecological deterioration on its own.

The year 2020 is not only the time frame of China's new and former five-year plans, but also the "super year" in the field of global ecological protection. The recent large-scale outbreak of COVID-19 has once again demonstrated the importance and urgency of strengthening ecological and biodiversity conservation. As the global economic recession triggered by the epidemic is expected to accelerate, enhancing ecological protection and biodiversity conservation, investment, and financing will play a positive role in economic recovery.

With the support of the China Council for International Cooperation on Environment and Development, this report aims to address two key problems in the field of ecological protection by drawing on successful international and domestic practices. The first one is that the traditional model of public finance is insufficient to meet the financing needs of ecological protection, and a large amount of social capital and financial resources have not been used effectively. Second, the key areas of ecological protection are often underdeveloped and poverty-stricken areas. The conflict between ecological protection and the urgent need for local economic development affects the effectiveness of ecological protection and the security of investment. Based on this, the report proposes the following policy recommendations:

Recommendation 1: Expand the Scope of Green Finance and Provide Strategic Guidance for Private Finance to Enter the Fields of Conservation and Biodiversity

- Short Term

- 1) Include biodiversity into China's green finance framework, and include ecological conservation finance into the guidelines for investment projects, the national 14th Five-Year Plan (FYP) and special plans in related areas, such as the 14th Five-Year Marine Development Plan.



- 2) Analyze the potential demand for and supply of conservation finance, and evaluate the effectiveness of existing environmental strategies, green finance practices, and public financial support.
- 3) Apply the “no net loss” principle in major economic plans and compensate the ecosystem in terms of both quantity and quality when the loss is unavoidable.
- 4) Promote strategic impact assessment in areas of particular natural richness or fragile ecosystems. Increase the weight of conservation-related factors in the assessment, especially the assessment of large-scale infrastructure development projects.
- 5) Integrate elements of conservation finance in the relevant declarations in CBD COP 15.

- Mid and Long Terms

Incorporate biodiversity into spatial planning and eco-civilization planning, and highlight the conservation of special important ecosystems.

Recommendation 2: Improve the Policy Framework of Conservation Finance and Establish a More Effective Incentive and Restraint Mechanism

- Short Term

- 1) Define the criteria for ecological and biodiversity conservation projects to provide clear benchmarks for the investment of financial institutions and social investors.
- 2) Financial regulatory authorities (e.g., PBOC, CBRC, CIRC, and CSRC) should provide guidance to financial institutions, trust funds, insurance asset management companies, and other large institutional investors through credit and regulatory policy, so as to emphasize on the impact of their activities on the ecosystems and natural resources.
- 3) Encourage investment in conservation finance through fiscal measures. Piloting land and tax incentive policies in areas with significant ecological improvement.
- 4) Establish a non-profit environmental cost information system under the support of the Government Procurement System and improve the information access and analysis abilities of decision-makers and investors in conservation finance.
- 5) Guide policy-based financial institutions and government funds, including social security funds and industrial investment funds of governments at all levels, to increase support for conservation investment.
- 6) Set green thresholds for both foreign procurements and investments, especially in the context of the Belts and Roads Initiative, to establish a green supply chain.

- Mid and Long Term

- 1) Establish a natural capital accounting system to provide standards and methods for the calculation of Green GDP. Apply the Green GDP as an evaluation benchmark in the promotion system for local officials when the accounting system is functional.
- 2) Explore the compensation mechanism based on the principle of “no net loss,” namely compensate ecological losses with “ecological protection behaviour,” instead of monetary-based compensation. In addition, take the “no net loss” principle as the next step in optimizing the ecological compensation system.
- 3) Establish a market-based mechanism for pricing, evaluating and distributing ecological assets, to promote the appreciation of ecological assets in the flow and attract more private capital to the field of ecological conservation.
- 4) Adjust tax policies to enhance conservation.



5) Undertake a comprehensive review of public subsidies.

Recommendation 3: Improve the Infrastructure of Conservation Finance by Strengthening the Systematic Management of Natural Resources and the Eco-environment Protection

- Short Term
 - 1) Strengthen the enforcement of environmental law, especially in ecologically sensitive and fragile areas.
 - 2) Establish the Corporate Eco-Environment Credit System to promote voluntary eco-friendly activities.
 - 3) Develop community-based conservation in China to solve the challenges of residential livelihoods and community governance simultaneously and comprehensively.
 - 4) Support the development of the consulting industry in conservation finance field to enhance the capacity building of financial and investment institutions in risk identification and decision making.
- Mid and Long Term
 - 1) Promote legislative activities that align with the development of conservation finance, and explore ways to increase of ecological protection responsibility of companies, banks, investors, and trustees in Commercial Bank Law, Securities Law, Securities Investment Fund Law, and Trust Law.
 - 2) Improve the environmental impact assessment system and strategic environmental impact assessment mechanism in China.



Contents

1. Foreword.....	2
2. Conservation in China: Policy and Practice.....	6
3. Conservation Challenges and Funding Gaps in China.....	8
3.1 Conservation Challenges of Terrestrial Ecosystem.....	8
3.2 Conservation Challenges of Marine Ecosystem.....	11
3.3 China's Impact on Overseas Ecosystem.....	12
4. The Financial Model of Conservation and Biodiversity in the World: Experience and Best Practice.....	14
4.1 Expanding Finance Directed at Conservation.....	15
4.2 Reform and Rule Change.....	18
4.3 Positive Disruption.....	19
4.4 China Overseas and Internationally.....	20
5. Framework, Main Tools and Challenges of China's Conservation Finance.....	21
5.1 Conservation Funding Sources in China.....	21
5.2 Challenges in Conservation Financing in China.....	24
6. Overall Plan to Promote Conservation and Biodiversity Finance in China.....	28
6.1 Improve the Efficiency of Using Government Financial Funds.....	28
6.2 Strengthen the Coordination Between Macro-financial Policies and Financial Regulatory Policies.....	29
6.3 Exert the Role of the Capital Market to Support Conservation Finance.....	30
6.4 Improve the Basic Conditions of Conservation Finance.....	30
6.5 Fully Utilize the Power from the Whole Society.....	32
7. Policy Recommendations on Promoting Conservation and Biodiversity Finance.....	33
7.1 Expand the Scope of Green Finance and Provide Strategic Guidance for Private Finance to Enter the Fields of Conservation and Biodiversity.....	33
7.2 Improve the Policy Framework of Conservation Finance and Establish a More Effective Incentive and Restraint Mechanism.....	34
7.3 Improve the Infrastructure of Conservation Finance by Strengthening the Systematic Management of Natural Resources and Eco-environment Protection.....	36



1. FOREWORD

To reverse the global trends of ecosystem degradation and biodiversity loss, the Convention on Biological Diversity (CBD) was signed in 1992. It was followed by the Strategic Plan for Biodiversity 2011–2020, issued at the 10th Conference of the parties to the CBD (COP 10) in Aichi, Japan, which provides 20 targets to halt the loss of biodiversity for the next decade, namely "Aichi targets." The coming CBD COP 15 to be held in Kunming, China will overview implementation of the Aichi Targets, summarize the progress of global biodiversity conservation over the past decade, and establish the structure and goals for the future 10 years of global biodiversity. However, most of the Aichi Targets are expected to fail. From the capital investment perspective, the economic development and resource utilization models that are centred on profitability are the main drag on changing the devastating global biodiversity trends. Ecological conservation funds that rely heavily on public finance are very limited, which makes it difficult to guarantee the full implementation of biodiversity conservation measures in various fields. In this context, maximizing mobilization of financial resources by developing ecological conservation finance to support ecological and biodiversity conservation has become a global concern.

Conservation Finance is interconnected with biodiversity finance, climate finance, green finance, and sustainable finance (see box 1). Conservation finance aims to leverage and effectively manage economic incentives, policies, and capital in the fields of conservation, restoration, efficient use of natural resources, and biodiversity protection, to achieve the long-term well-being of nature and the services it provides to society. Conservation finance includes an array of financing mechanisms, such as grants, taxes and fees, debt-for-nature swaps, credit, bonds, trust funds, and payments for environmental services (PES).¹ Professionals in this field work with stakeholders ranging from local communities to large multilateral finance institutions and philanthropic organizations, impact funds, private corporations, and governments. They support conservation efforts that extend across terrestrial, freshwater, coastal, and marine areas to protect ecosystem services and cultural values, and increase direct financial revenues through activities that produce positive biodiversity outcomes.²

Box 1. Conservation finance and biodiversity finance, climate finance, green finance, and sustainable finance

Biodiversity finance provides financial incentives and manages capital for sustainable biodiversity management. It includes both private and public financial resources for biodiversity conservation, as well as commercial investments in favour of biodiversity conservation and biodiversity-related capital market transactions. The definition of biodiversity in CBD covers the diversity of ecosystems, species, and genetic resources. Thus, ecological protection and biodiversity conservation are closely related. Therefore, conservation finance and biodiversity finance have many similarities.

Climate finance refers to financial activities that support climate change mitigation and

¹ <https://www.conservationfinancealliance.org/what-we-do>

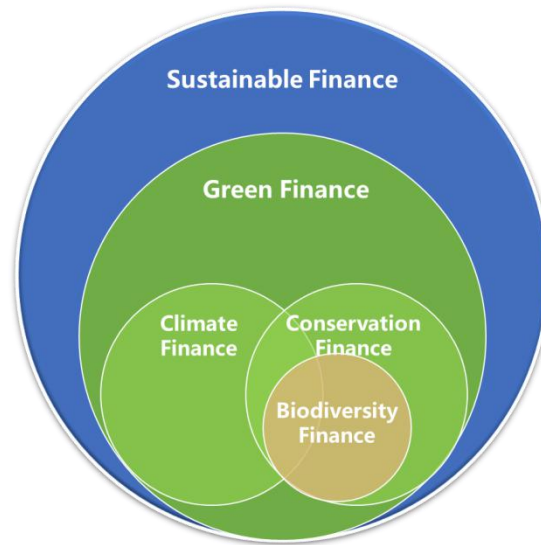
² <https://wwf.panda.org/?175961/wwfguidetoconservationfinance>

adaptation. Although the mitigation of climate change is related to ecological conservation, the emphasis of climate finance and ecological conservation finance is still quite different.

Green finance refers to economic activities that support environmental protection, climate change mitigation, and resource saving. Green finance provides investment, operation, risk management, and other financial services to projects in the fields of environmental protection, energy saving, clean energy, green transportation, and green building. According to the catalogue of Green Bond Support Projects published in 2015 by the Green Finance Committee of the China Institute of Finance, comprehensive control of soil erosion, ecological rehabilitation, and disaster prevention and control, and construction of nature reserves are all part of green projects. As ecological protection is one of the supporting activities of green finance, conservation finance could be viewed as a part of green finance.

Sustainable finance refers to a financial system that is oriented by long-term and sustainable economic activities, in which environmental and social factors are well taken into account in the investment process.

In general, although climate finance and eco-conservation finance are interrelated, their focuses differ. Climate finance is centred on mitigating climate change, while conservation finance is more about ecological conservation. They both belong to the category of green finance and are also part of what is known internationally as sustainable development finance, as illustrated in the figure below.



In recent years, conservation finance is growing rapidly while facing challenges at the same time. On the one hand, Funding for conservation efforts globally is broadly acknowledged as insufficient. Between 2014 and 2016, there was a 62% increase in private capital allocated to conservation efforts. With all flow combined, analyses arrive at high estimates of around USD 120 billion revenues directed to conservation by 2020. However, this is woefully below the estimated annual requirement of USD 300–400 billion needed to finance conservation. On the other hand, the economic system that incentivizes and facilitates flows of finance toward conservation has not yet been established. For instance, for every USD 1 provided to projects reducing emissions from deforestation, USD 150 is channelled to activity that drives deforestation. Thus over 99% of our economic engagement with forests is destructive. So

even if annual finance flows were increased eight-fold to meet the recommended USD 400 billion target, it changes the ratio of bad money to good from 150:1 to around 18:1 or 19:1. We will never succeed by merely increasing financing for afforestation and restoration without reducing the overwhelming trend for our broader economic activities to be destructive.

China has a variety of ecosystem types, including forests, wetlands, grasslands, and oceans, as well as rich biodiversity (see Figure 1.1). Conservation and biodiversity protection are the important contents of the eco-civilization in China. In 2015, for example, the value of ecosystem services in China is estimated to be 72.81 trillion yuan, about 1.06 times the GDP of that year.³ Strengthening conservation and biodiversity protection is not only an important measure to maintain China's ecological security and improve people's well-being, but also an important practice to create social welfare and realize President Xi Jinping's "Two Mountains" theory.⁴

Over the past years, China and the international community have been working on sustainable finance, especially on climate finance. However, the current ecological security situation in China is not promising. The recent large-scale outbreak of the COVID-19 virus reveals that there is still considerable work to be done in terms of conservation and biodiversity protection. In particular, establishing a financial system that supports restoring and protecting the natural environment, natural resources, and ecosystems is a common challenge facing China and the international community.

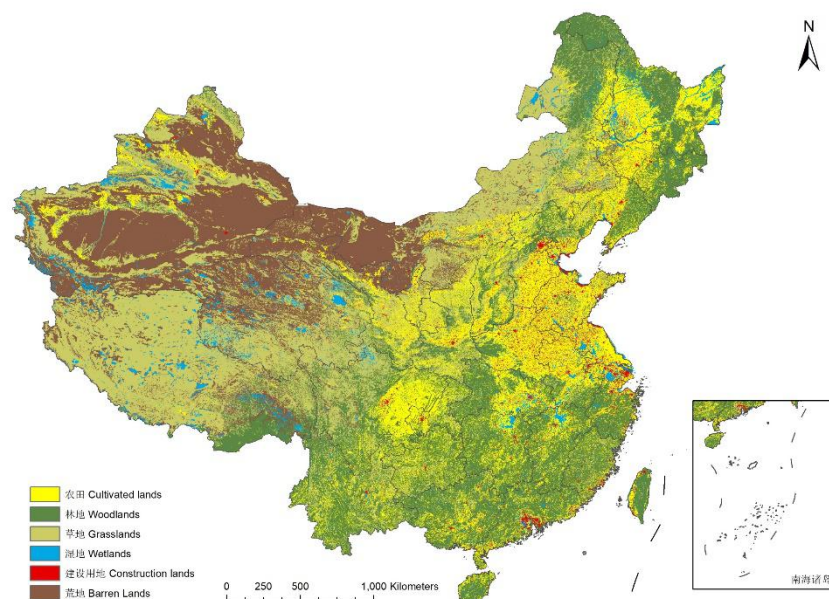


Figure 1.1 Ecosystem distribution in China
Source: Chinese Academy of Sciences

³ Ma Guoxia et al., Accounting Research on China's Terrestrial Ecosystem Product Value in 2015, *Environmental Science in China*, 2017

⁴ President Xi Jinping first put forth the idea that "lucid waters and lush mountains are invaluable assets" in his inspection tour to Anji County, Zhejiang Province in August 2005. Colloquially known as the "Two Mountains" theory, it has been the guiding thought of China's ecological civilization.



The year 2020 is not only the starting of China’s new FYP but has also been dubbed the “Super Year for Nature.”⁵ Supported by CCICED, this report is striving to address two key challenges: 1) Public financing sources alone cannot meet the demand of conservation while a large amount of private capital and financial resources have not been effectively used; 2) The key areas for conservation are often underdeveloped areas or poverty-stricken areas at the same time. The conflict between conservation and local development affects the effectiveness of conservation and the security of investment. The purpose of this study is to unlock more effective private finance to conserve ecosystems and biodiversity for China as soon as possible, with better and more innovative use of financial mechanisms.

⁵ The coming CBD COP 15 to be held in Kunming, will assess the global biodiversity conservation process over the past decade, and consider adopting the new “Post-2020 Global Biodiversity Diversity Protection Framework.” As an important step in the planning of the post-2020 biodiversity agenda, the IUCN World Conservation Congress (WCC) to be held in Marseille, France in June 2020, will gather ecological protection experts, social organizations, and government representatives from all over the world to discuss the role of nature conservation in achieving the 2030 Sustainable Development Goals.

2. CONSERVATION IN CHINA: POLICY AND PRACTICE

Significant progress has been made in China's ecological and biodiversity conservation in the past decades. To achieve the long-term protection of its important natural ecosystems and resources, China has launched a series of laws and regulations, including the Wildlife Protection Law, the Regulations on Protection of Wild Plants, and the Regulations on Nature Reserves, and established 2,750 nature reserves (of which 474 are national nature reserves) and 11 pilot national parks. In addition, under the support of the Forest Act, the Prairie Act, and the Wetlands Act, China has implemented multiple ecological restoration projects, including the Natural Forest Resources Protection Project (NFRPP), Returning Farmland to Forests and Grassland Project (RFFGP), and Ecological Protection and Restoration of Mountains-Rivers-Forests-Farmland-Lakes-Grasslands in key ecological function areas of China (Figure 2.1).



Figure 2.1 China's Practices in Ecological and Biodiversity Conservation

China has been increasing the amount of investment in ecological and biodiversity conservation (as shown in Table 2.1). Among them, RFFGP and NFRPP are the two largest ecological projects in China, with a total investment of 830 billion yuan. In terms of expenditure, the funding was used in multiple areas, including to cover the construction costs of nature reserves, the implementation costs of ecological restoration projects, and other related operation fees. The fund also covers economic incentive expenditures such as ecological compensation for areas that are prohibited or restricted from development and areas that are ecologically rehabilitated. According to statistics, from 2008 to 2015, China has invested 251.3 billion yuan in transfer payment projects for key ecological zones. In addition, with the development of business for public good, more social capital and the general public have participated in the ecological conservation field. Social institutions that are focusing on ecological protection, such as Ant Financial, SEE Conservation, Paradise Foundation, and China Greening Foundation, began to emerge (as shown in Table 2.1).

Table 2.2 Investment in major conservation projects in China

Conservation Project	Capital Investment
RFFGP	By 2019, more than 500 billion yuan had been invested in returning farmland to forests and grassland. ⁶
NFRPP	By 2017, China had invested 331.355 billion yuan in natural forest protection projects. ⁷
SECP	Between the 11th FYP and the 15th, the state invested 18.8 billion yuan in SECP. ⁸ The total investment of the national SECP is estimated to be as high as 22.9 billion yuan from 2017 to 2020.
TNSFP	By 2018, the TNSFP had invested 44.3 billion yuan in central and local finance ⁹ .
EPRM	As of 2019, the central government has issued a total of 36 billion yuan in funds for key ecological conservation and rehabilitation. ¹⁰
RGLGP	By 2018, China had invested 29.57 billion yuan in the program. ¹¹

After more than 20 years of effort, China's vegetation coverage rate has increased significantly, and ecological functions such as water conservation and soil and water conservation have been well improved. The forest coverage rate has increased from 8% in the 1970s to 22.96% in 2018, as shown in Figure 2.2. In the past 20 years, China has added about 25% of the world's new vegetation cover.¹² The increase in vegetation cover has reduced the area of soil erosion from 3.56 million square kilometres in 2000 to 2.524 million square kilometres in 2018.¹³ Desertification and desertified areas achieved "double reduction" for 15 years in a row.¹⁴

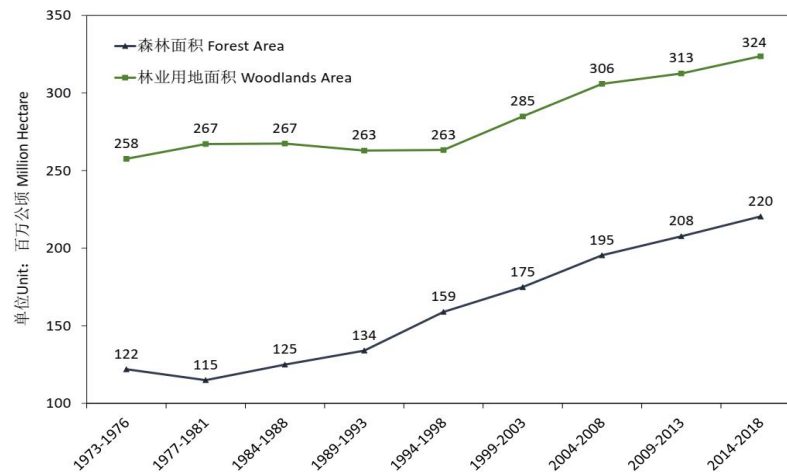


Figure 2.2 The change of forest and forestry areas in China from 1973 to 2018
Source: Forestry Statistical Yearbook

⁶ <http://www.forestry.gov.cn/main/435/20190715/102809090429670.html> [2020-01-10]

⁷ <http://env.people.com.cn/n1/2018/0518/c1010-29999970.html> [2020-01-10]

⁸ <http://www.npc.gov.cn/npc/c541/201010/bbcc0908d02a401db646e9509399c058.shtml> [2020-01-10]

⁹ http://www.gov.cn/xinwen/2018-12/24/content_5351500.htm [2020-01-10]

¹⁰ http://www.gov.cn/xinwen/2019-09/20/content_5431649.htm [2020-01-10]

¹¹ http://www.gov.cn/xinwen/2018-07/17/content_5307177.htm [2020-01-10]

¹² Chen et al. (2019) China and India lead in greening of the world through land-use management. *Nature Sustainability*, (2) 122–129.

¹³ Ministry of Water Resources, national soil and Water Conservation Plan (2015–2030) ; 2018 National Press Conference on soil and water loss dynamic monitoring results

¹⁴ http://www.gov.cn:8080/xinwen/2020-01/06/content_5466784.htm [2020-01-10]

3. CONSERVATION CHALLENGES AND FUNDING GAPS IN CHINA

There are still many problems and challenges facing China's ecological protection work. China has among the richest ecosystems and highest biodiversity in the world; at the same time, the country has a large distribution of fragile ecosystems and threatened species. According to a 2017 survey, 10,102 species of vascular plants and 2,471 species of vertebrates (excluding marine fish), which respectively accounted for 29.3% and 56.7% of the total number of species assessed, are in need of nationwide attention and protection. In addition, as the world's second-largest economy, China's impact on global ecosystems has accelerated. The funding gap of Chinese ecological conservation could be reflected in the following three terms.

3.1 Conservation Challenges of Terrestrial Ecosystems

3.1.1 Low Conservation Efficiency and Insufficient Funding Resource in Nature Reserves

The construction fund for protected lands is generally insufficient. It is estimated that effectively protecting 18% of land areas and 10% of sea areas in China would require an investment of around 0.065% to 0.2% of its GDP each year (at 2011 price levels, about 30.6–95 billion yuan).¹⁵ But in 2014, the financial outlay for China's nature reserves at all levels was only 8.2 billion yuan, or an average of 6,119 yuan per square kilometre, far below the estimated request of 42,000 yuan per square kilometre.¹⁶

The lack of investment in protected areas in China has led to a reduction in the effectiveness of conservation. On the one hand, most of the protected areas are still patrolled manually, and new technologies are rarely used in activities such as evaluation and monitoring of the protected areas. On the other hand, staff salaries and official expenses of nature reserves at all levels are mainly guaranteed by local governments at the same level. Since most of China's natural reserves are located in economically backward areas (see Figure 3.2), financial support for natural reserves here is woefully inadequate. The low wages¹⁷ and the lack of basic social security result in difficulties in constructing high-quality local patrol teams.

¹⁵ <http://www.baohudi.org/?p=5130> [2020-01-10]

¹⁶ Wang Xiaoxia and Wu Jian, Analysis of the level of financial investment in China's nature reserves, Environmental Protection, 2017

¹⁷ About RMB 3,000-4,000 per month

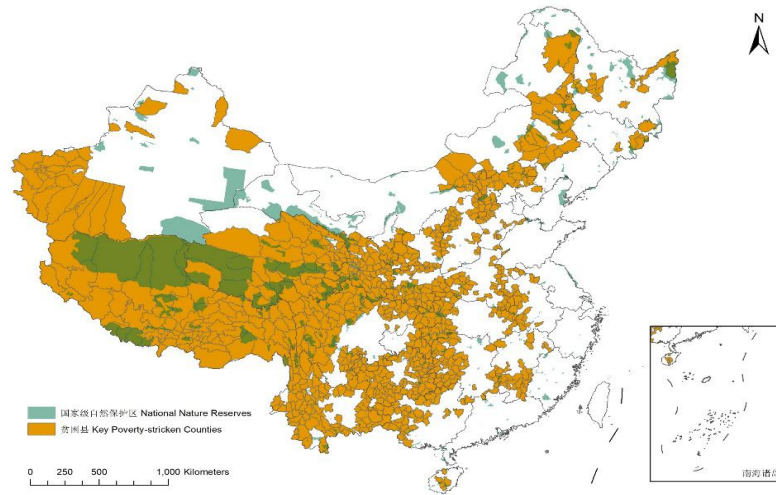


Figure 3.2 The distribution of national nature reserves and poor villages in China

3.1.2 Severe Ecological Degradation Risks in Wetland Systems

As indicated in the national wetland surveys conducted in 1995–2003 and 2009–2013, the overall trend of wetland system ecological degradation has not yet been reversed. The area of wetlands in China has been reduced by 50.9 million mu in the past decade, which is equivalent to the area of two Beijing cities. The ecological environment of the existing wetland system is also looking grim. Due to the problems of environmental pollutions, overfishing, reclamation, invasive alien species, and expansion of infrastructure, more than 50% of the surveyed wetlands are classified as in “poor” ecological condition. The deterioration of wetland ecosystems has directly destroyed the habitat of wetland organisms. The two surveys recorded a sharp decline in bird species, with more than half of the bird population declining significantly.

In order to improve the degradation trends of its wetland systems, China began to set up special funds for wetland protection in 2009, but the existing funds are still far from enough compared with actual demand. The results of the second wetland resources survey show that 69% of the surveyed wetlands in China are threatened, and more than 20% of them need to be artificially restored. Based on the restoration cost of USD 10,000 to USD 20,000 per hectare, the future cost of wetland restoration in China could be as high as one hundred billion yuan.¹⁸

3.1.3 High Remediation Pressure in the Soil Environment

A safe soil environment is an important basis for the healthy and stable development of a regional natural ecosystem. The prevention and control of soil pollution in China is still at an early stage. Facing a serious soil pollution problem, China has invested 28 billion yuan from the central government budget since 2016 to prevent and control soil pollution nationwide. However, compared to the overall investment requirement of 7 trillion yuan,¹⁹ a major funding gap remains.

The biggest funding pressures are centred in arable land and abandoned mining land, where soil pollution is extremely serious. The rate of excessive pollution in arable land and

¹⁸ Estimating Wetland Restoration Costs at an Urban and Regional Scale: The San Francisco Bay Estuary Example, 2013; Cost Sheet for Reconstructed Wetlands, 2016;

¹⁹ Hong Yang, China’s soil plan needs strong support, Nature, 2016.

abandoned mining land is as high as 19.4% and 34.9% respectively (as shown in Figure 3.3). In addition, compared with the construction land in urban area, it is especially difficult to identify responsible investors and commercial financing modes for the remediation of these areas.

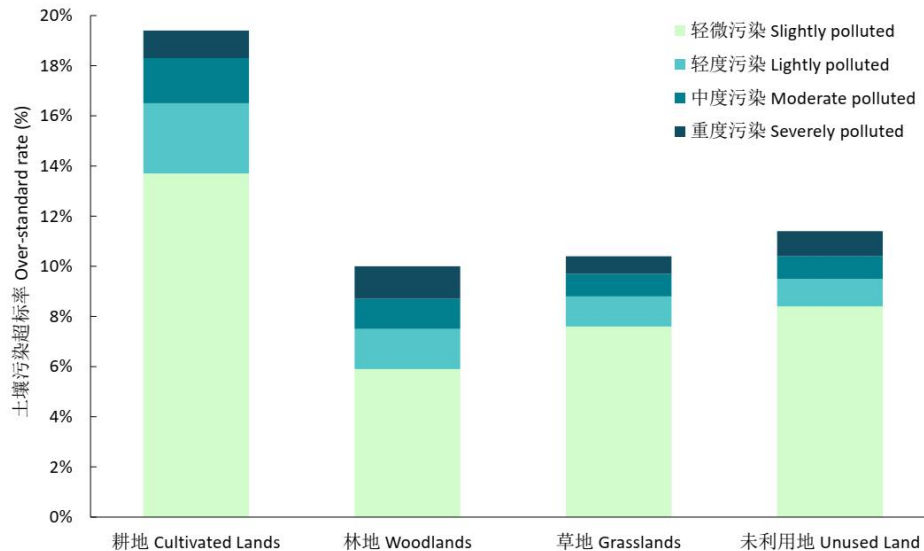


Figure 3.3 The result of the national soil pollution survey

Source: First National Soil Pollution Survey (2005–2013)²⁰

3.1.4 Severe Challenges for Yangtze River and Yellow River

The Yangtze and Yellow Rivers offer not only important supports for China's sustainable economic and social development, but also serve as the home of rare and endangered animals and plants. However, with the acceleration of urbanization along the economic belt, the ecological environment of the Yangtze and Yellow River basins faces severe challenges. The extensive development of the coastal area has had a series of consequences, including the reduction of forest and grassland coverage, the shrinking of the lakes and wetlands in the middle and lower reaches, the continuous decline of the Aquatic Biodiversity Index, and the extinction of many rare species such as the Yangtze River Paddlefish. In order to protect the ecological bottom line of the Yangtze and Yellow Rivers, China published the *Ecological and Environment Protection Plan of the Yangtze Economic Belt* and the *Action Plan for the Protection and Restoration of the Yangtze River* in 2017 and 2019. In addition, the ecological protection and high-quality development of the Yellow River Basin have been put on the national agenda in 2019. Thus, more funding would be needed for conservation activities in these two rivers, including the protection of natural coastline, the construction of ecological buffer zones of rivers and lakes, the management of eutrophic lakes, and the protection of rare and endemic fish species.

²⁰ The national survey of soil pollution divides the soil pollution into five levels. If the content of pollutants doesn't exceed the standard, it is not polluted; if the content of pollutants is between one times to two times (including), it is slightly polluted; if the content is between two times and three times (including), it is lightly polluted; if the content is between three and five times (including), it is moderately polluted; if the content is above five times, it is severely polluted.



3.1.5 Urban Biodiversity Conservation Is Still in Its Infancy

With the acceleration of global urbanization, links between humanity and nature are declining. The protection and promotion of biodiversity in urban areas will be important to reconstruct the link between humans and nature. In recent years, urban biodiversity is gradually gaining global attention, and its importance in China is increasing as well. For example, China has carried out the ‘ecological restoration and urban repair’ project in 2017 to improve the living environment and control urban ecological problems. On this basis, how to further integrate biodiversity conservation into China's urban planning, construction and management, and fully mobilize the resources and strength of enterprises’ and the public’s contribution to ecological conservation, is one of the important questions that need to be addressed in China.

3.2 Conservation Challenges of Marine Ecosystem

With the rapid development of the marine economy, the trend of marine ecosystem deterioration in China is becoming more and more obvious.²¹ In 2018, only 23.8% of China's monitored marine ecosystems, including estuaries, bays, tidal wetlands, coral reefs, mangroves, and seagrass beds, were in a healthy state, and 71.4% and 4.8% of ecosystems were respectively in sub-optimal healthy and unhealthy states.²² The density of phytoplankton in most estuaries and estuaries is high, while the density of fish eggs and larvae is relatively low. In addition, the coverage of the coral reef ecosystem is decreasing. The discharge of pollutants from land and near shore and the frequent disturbance of human activities are the main factors affecting China's marine ecological security. In 2018, 12.4% and 14.9% of the 194 river sections were of Class V and Class V, respectively. Except for soluble pollutants, solid wastes also have a high distribution density on the sea surface, the beach, and the seabed, and all of them are mainly plastic wastes. In addition, China is one of the countries in the world most severely affected by marine disasters. According to statistics, in 2018, marine ecological disasters such as coastal erosion, red tides, green tides, seawater intrusion and soil salinization frequently occurred in China, causing direct economic losses of 4.777 billion yuan and the deaths of 73 people (including those listed as missing).²³

In order to solve the outstanding ecological and environmental problems in the marine ecosystem, China issued an action plan for the comprehensive treatment of the Bohai Sea in November 2018, to ensure that the ecological environment of the Bohai Sea will not continue to deteriorate by taking measures to control land-based pollution, marine pollution, ecological protection and restoration, and environmental risk prevention. China has invested 7 billion

²¹ Yi Aijun, Discussion on Marine Ecological Security in China, Environmental Conservation, 2018.

²² The health status of marine ecosystem can be divided into three levels: healthy, sub-healthy, and unhealthy. In a healthy state, an ecosystem maintains its natural attributes. Biodiversity and ecosystem structure are basically stable, and the main service functions of ecosystems are functioning normally. The ecological pressure, such as environmental pollution, man-made destruction and irrational exploitation of resources, is within the carrying capacity of the ecosystem. In a sub-healthy condition, the ecosystem basically maintains its natural attributes. Biodiversity and ecosystem structure have deteriorated to a certain extent, but the main service function of the ecosystem is still intact. Ecological pressure, such as environmental pollution, human-made destruction and irrational exploitation of resources, exceeds the carrying capacity of the ecosystem. In the unhealthy condition, the natural attributes of the ecosystem have obviously changed. Biodiversity and ecosystem structure have undergone great changes, and the major service functions of the ecosystem have been seriously degraded or lost. Ecological pressures such as environmental pollution, human-made destruction and irrational exploitation of resources exceed the carrying capacity of the ecosystem.

²³ China maritime disaster bulletin, 2018.

yuan in comprehensive control of the Bohai Sea in 2019. On this basis, China is exploring the construction of marine national parks to enhance the authenticity and integrity of important marine ecosystems and their biodiversity resources. In the context of the increasingly sound systems and mechanisms for marine ecological protection, there would be more financial demand in terms of the development and application of marine ecological protection high-tech, as well as the transformation and upgrading of the marine industry.

3.3 China's Impact on Overseas Ecosystems

The Belt and Road Initiative (BRI) is a global cooperation initiative of China through bilateral and multilateral mechanisms, aiming at building a community of use, destiny and responsibility based on political trust, economic integration, and cultural tolerance. Within the countries of the BRI, billions of dollars are invested in building transport infrastructure (about USD 190 billion since 2013) and energy infrastructure and supply chains (about USD 280 billion since 2013), as well as mines and agriculture.²⁴ Investment in BRI infrastructure can contribute to social and green development. Examples include investments in micro-grids in conjunction with clean energy production through wind and solar, water management, wastewater treatments, and sustainable agriculture.

Apart from the economic benefits of investments, investors and society should aim to minimize environmental risks in overseas investments in the BRI. For example, any infrastructure construction can directly lead to breaks in landscape and habitat connectivity, as well as to secondary effects such as the spread of invasive animal and plant alien species, wind throws, fires, animal kill (e.g., through roadkill), pollution, poaching, and microclimate issues.

As the BRI encompasses many countries and their ecosystems (some studies suggest the BRI infrastructure affects 4,138 animal and 7,371 plant species and that BRI corridors overlap with 265 threatened species and 46 biodiversity hotspots),²⁵ three issues stick out for biodiversity and ecosystem protection:

- Investors, project developers, and local government should strictly execute stringent environmental impact assessments (EIAs) based on Chinese or international best practices (e.g., IFC Performance Standards 6) and stringent project oversight to minimize the negative impacts of projects while protecting ecosystems.
- Investors, project developers, and local governments should include transboundary impact assessments (TIAs) (e.g., based on UNECE Convention on Environmental Impact Assessment in Transboundary Context) to ensure cross-border impacts of projects are avoided, mitigated and/or compensated fairly across affected countries.

²⁴ Ministry of Commerce People's Republic of China (MOFCOM), "Statistics," Statistic Foreign Trade Cooperation, 2020, <http://english.mofcom.gov.cn/article/statistic/foreigntradecooperation/>; Scissors Derek, "China Global Investment Tracker 2019," China Global Investment Tracker (Washington: American Enterprise Institute, January 2020), <http://www.aei.org/china-global-investment-tracker/>.

²⁵ Alice C. Hughes, "Understanding and Minimizing Environmental Impacts of the Belt and Road Initiative," *Conservation Biology* 33, no. 4 (August 2019): 883–94, <https://doi.org/10.1111/cobi.13317>.



- Investors and project developers should support local communities to manage ecosystem services by providing transparent data on ecosystem impacts, which would allow for a better adjustment of ecosystem protection throughout the project lifecycle.
- Investors and project developers should have environmental liability insurance to be able to compensate for unforeseen events. This should also include end-of-life restoration activities.

To support biodiversity protection in the BRI, the “Green Development Guidance for Belt and Road Initiative Projects” (formerly the “Green Light System”) of the BRI International Green Development Coalition (BRIGC), under the supervision of the Chinese Ministry of Ecology and Environment (MEE) aims to provide an evaluation tool and policy tools to ensure that BRI investments are contributing to green development and minimizing negative environmental impact.²⁶ Various other initiatives to reduce biodiversity and environmental risks associated with the BRI have been put forward by Chinese government and non-governmental organizations and their international partners as well as financial institutions. The BRI Green Investment Principles (GIP) include seven principles to encourage financial institutions to invest in projects that meet the Paris Climate Accord and contribute to the UN Sustainable Development Goals;²⁷ The Chinese Green Credit Guidelines issued by the CBRC (now CBIRC) in 2012 are applicable to international investments of Chinese institutions in the BRI countries.²⁸ The guidelines highlight the role of national laws and thus don’t encourage financial institutions to go beyond possibly weaker national environmental legal frameworks in BRI countries. Overall, coordinated and applied actions that successfully mitigate adverse environmental impacts of BRI investments, particularly in regard to biodiversity loss, should be accelerated.

To sum up, the lack of available funding is one of bottlenecks to the ecological and biodiversity conservation in China. With the downward pressure on China's economy and the slowdown of fiscal revenue growth, conservation financing mode dominated by public sector has become unsustainable. It has become a matter of priority in China to build channels for private capital and financial resources by forming a diversified, sustainable and high-quality conservation financing system.

²⁶ Secretariat of BRI International Green Development Coalition, “Joint Research on Green Development Guidance for Belt and Road Initiative (BRI) Projects Was Launched,” BRI Green Review (Beijing: BRI International Green Development Coalition, January 2020).

²⁷ Green Finance Leadership Program, “Green Investment Principles (GIP) for the Belt and Road,” December 2018, <http://www.gflp.org.cn/public/ueditor/php/upload/file/20181201/1543598660333978.pdf>.

²⁸ China Banking and Insurance Regulatory Commission (CBIRC), “绿色信贷指引” [Green Credit Guidelines]” (Beijing: China Banking and Insurance Regulatory Commission (CBIRC), February 24, 2012). http://www.cbrc.gov.cn/chinese/home/docDOC_ReadView/127DE230BC31468B9329EFB01AF78BD4.html.

4. THE FINANCIAL MODEL OF CONSERVATION AND BIODIVERSITY IN THE WORLD: EXPERIENCE AND BEST PRACTICE

The global challenges linked to the steady loss of biodiversity and ecosystem services have, in recent years, begun to take centre stage. The 2019 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) report leaves no doubt that the risks linked to the degradation of nature and natural resources are so high that the future of human well-being, prosperity, and economic stability are under imminent threat. Further, the World Economic Forum (WEF) Global Risk Report 2020 states that the loss of biodiversity ranks as the second most impactful and the third most likely risk for the next decade.

There have long been calls to invest far greater sums of money in conservation activities such as protected areas, species protection, and landscape restoration. The sums generated have fallen well below minimum requirements for stemming the downward trend—much less reversing it.²⁹ The public sector, with rare exceptions, has failed to rise to the challenge, and efforts to attract substantial private capital into conservation activities have hit up against the requirements of private actors for risk management and adequate return over a relatively brief time horizon. But it is not simply a question of directing more money at conservation priorities. Equally, if not more important, is to reduce financial flows to activities that harm biodiversity.

The dominant financial model, followed over the past few decades in most countries of the world, rewards capital owners and shareholders at the expense of the public policy goals reflected in the 2030 Agenda, with its Sustainable Development Goals, the Paris Agreement on climate change, and the targets regularly set by the Convention on Biological Diversity. Too much financial activity still tolerates—and often rewards—the destruction of natural landscapes or the depletion of scarce natural resources. It is time to rethink the financial model with a view to advancing the world that we would like to see come into being.

A recent paper by the Finance for Biodiversity (F4B) initiative proposes a new framing of the conservation finance challenge – a way of thinking about both the challenges and opportunities. It represents an example of the new thinking that is going on at the interface between the pressing needs of nature conservation and the operations of the financial system.

In the sections below, we set out international best practice in conservation finance in three streams:

- Efforts to direct more finance – in particular private capital – toward activities compatible with conservation
- The need for a rule change to ensure a more favourable environment for conservation;
- The importance of creating a greater public demand for conservation results – and the attendant intolerance of activities that undermine nature.

²⁹ According to the GEF, an estimated USD 300 billion–400 billion is needed annually to preserve healthy terrestrial and marine ecosystems, and the clean air, fresh water, and biodiversity on which we all depend. However, only USD 52 billion is currently flowing towards projects supporting conservation, while the private sector manages an estimated USD 300 trillion in assets.



Recommendations in these three areas can be found in Chapter 7.

4.1 Expanding Finance Directed at Conservation

A great many efforts are underway internationally to address this shortfall. In response to the growing interest in responsible and impact investment, and the rapidly growing demand for conservation-friendly options, a series of specialized investment houses have sprung up to structure this new market.³⁰ These include:

- **Fund-building efforts**, for instance, numerous existing funds such as Althelia and Mirova, Conservation Capital, or Encourage Capital. The Meloy Fund, implemented by Conservation International (CI) and RARE, established the first fund for sustainable small-scale fisheries in Southeast Asia to improve the conservation of coral reef ecosystems by providing financial incentives to fishing communities in the Philippines and Indonesia to adopt sustainable fishing practices and rights-based management regimes. Althelia, with the support of CI and with technical and scientific advice from the Environmental Defense Fund, launched the Sustainable Ocean Fund as an impact investment vehicle that can deliver marine conservation, improved livelihoods, and attractive economic returns.
- These efforts are accompanied by efforts from the public sector, or through public-private partnerships, to **clear the obstacles facing conservation finance** and to ensure that those wishing to build this field have access to assistance and advice. This includes:
 - Fund aggregation functions, such as the UNDP Finance for Nature team’s efforts to build an Exchange Traded Fund (ETF), or the UK Government’s exploration of interventions to build the field (via the International Climate Finance team at the Department for Business, Energy and Industrial Strategy – BEIS). It also includes efforts to create intermediaries between capital seeking responsible nature-based investments and those with projects under development. A prominent example of this is the Nature Conservancy’s NatureVest.
- These efforts seek to **identify “investor-grade” activities** that meet the risk and return profiles required by investors, including the use of public contributions to lower perceived risk and to analyze and disseminate “best practice” in this field.
- They have now moved beyond development of projects for investors to look at a range of issues at the interface between finance and nature conservation, including **refinement of tools** to value the contribution of natural capital to overall economic performance and to bring together professionals in these fields to exchange experience, including:
 - Organizations engaged in building knowledge bases and providing tools to facilitate improved conservation finance-related activity, including the Natural Capital Finance Alliance, Forest Trends, Global Canopy and the Biodiversity Finance Initiative. The World Bank’s Global Program on Sustainability (GPS) has also generated a good deal of data in this area. Best practice guidance on conservation finance is also available through the Conservation Finance Alliance’s “Conservation Finance: a framework.”

³⁰ This section illustrates the different approaches currently underway to enhance conservation finance. More information can be found in the Annex to this chapter.



- **Landscape mapping** initiatives, most notably the Forest Trends-authored State of Private Investment in Conservation 2016, Global Canopy’s Little Biodiversity Handbook (presently being updated), and the various publications that are commissioned by and cluster around the CPIC and Crédit Suisse events.
- **Convening and networks**, especially the CPIC and Crédit Suisse events, that play an important role in community and network building and information exchange.
- Related efforts to develop the concept and practice of regarding natural resources and ecosystems as an important form of—and contributor to—**sustainable infrastructure** development. The work of the World Resources Institute, for example, on natural water infrastructure, has emphasized the highly cost-effective contribution of natural ecosystems to improved human well-being.
- A major effort is underway to strengthen the base of knowledge and data accessible to finance professionals, both to assess the impact of investments on biodiversity parameters and to strengthen the locally relevant data needed to make sound investment decisions. These include:
 - **Data providers**, such as the UN Biodiversity Lab, Global Forest Watch, ENCORE from the Natural Capital Finance Alliance, the work of CDP and integrations into mainstream data providers such as Bloomberg from organizations such as Sustainalytics. New specialist approaches are also emerging; for example, the Sustainable Digital Finance Alliance’s recent “Fintech for Biodiversity Challenge.”
- While there is still an absence of robust and widely accepted **norms and standards**—or even of broadly accepted definitions of conservation or biodiversity finance—a series of guidelines and standards are emerging in major areas of conservation-related investments and the movement to accelerate the uptake of these is accelerating. The EU has recently added a focus on biodiversity finance in its work on sustainable finance taxonomy. Examples of work in this area include:
 - **Guidelines, commitments, and standards**, such as the New York Declaration on Forests, and the ZUG Faith-Consistent Investing Guidelines. Other initiatives include Investors Group on Climate Change, Disclosure Insight Action, Principles for Responsible Investment, and the Institutional Investors Group on Climate Change.
 - Relevant in this area are the Green Investment Principles for the BRI developed by the City of London Corporation’s Green Finance Initiative with strong cooperation from China.

Finally, taking a leaf from the book of climate change action, efforts are underway to increase the **transparency** of corporations and investors in terms of the impact of their investments on biodiversity. This effort is both general and specific.

At the general level, a series of international public and private players are considering the establishment of a **Task Force for Nature-Related Financial Disclosure (TNFD)**. Modelled on the successful Task Force on Climate-Related Financial Disclosure operated by the Financial Stability Board, it would develop a standard and a requirement for corporations and investors to disclose the impact on biodiversity of their actions. This would supply investors with the basis for better assessing the risks to their investments related to



biodiversity and ecosystems, and for them and governments to insist on such disclosure as a condition of access to capital. A proposal in this regard is likely to be discussed at CBD COP 15 in early 2021.

In terms of public finance instruments, a renewed interest is being shown in **Debt for Nature Swaps**. First developed in the 1980s, they enabled bilateral debt under the Paris Club to be drawn down or eliminated in exchange for an agreed level of investment in nature conservation by the indebted country in its national currency. This conditional debt draw-down removed a hard currency repayment obligation in exchange for a more manageable deployment of national currency with a conservation benefit. With the prospect of developed and emerging economies likely to sink once more deeply into debt as a result of the COVID-19 pandemic, there is a renewed interest in the potential of debt-for-nature swaps and related instruments (e.g., green bonds for nature-related investments, blue bonds for ocean conservation) to offer an incentive for nature conservation in exchange for debt relief.

At a more specific level, efforts are focused on improving the metrics that relate to measuring the impact of corporate activity and investment on biodiversity-related factors. Disclosure must yield reliable and comparable impact data and the metrics for this are still at an early stage. The French Caisse des Dépôts Group are developing and refining a “Global Biodiversity Score,” and the World Wide Fund for Nature (WWF) and the International Union for Conservation of Nature (IUCN) have similar tools.³¹ However, the set of metrics for measuring the biodiversity impact of economic activity requires rapid further development and alignment among the standards used by different countries.

All of the above describe a wide range of creative efforts underway internationally to channel funding into activities compatible with nature conservation, whether these activities have as their principal purpose the setting aside of natural resources or their exploitation within acceptable limits. It focuses very centrally on matching a growing interest on the part of investors for conservation-compatible activities through increasing the supply and quality of investment opportunities available to investors.

The main barriers for scaling up conservation finance include lack of capacity, the small size of projects, the heterogeneous nature of projects, and lack of an enabling environment.

Conservation finance vehicles need to include sourcing and structuring investments so they are consistent with the asset-allocation protocols of institutional investors, preferably with competitive, risk-adjusted returns and with the most efficient practicable application of increasingly scarce public and philanthropic credit through blended finance (i.e., DFI loans/guarantees/grants, sovereign loans/guarantees/subsidies, and philanthropic grants). Opportunities to expand the use of blended finance will require continued innovation to help countries and private sector partners match the right types of financial instruments to specific project goals and objectives, including in the natural resource management sectors. Support for project preparation, along with aggregation and bundling of projects that can attract large-scale investors will also be needed in many cases.

³¹https://ec.europa.eu/environment/biodiversity/business/assets/pdf/Assessing_the_footprint_of_economic_activities-Global_Biodiversity_Score.pdf

Increasingly, however, two things are becoming clear. First, despite encouraging growth in finance devoted to conservation-compatible activities, the proportion of investments that seek conservation-related projects remains very small and is likely to plateau at a modest level. Second, many aspects of the policy and regulatory framework within which investment decisions are made at best do not encourage conservation-friendly investment and, in a great many cases, serve as a strong counter incentive to linking finance and conservation.

4.2 Reform and Rule Change

So, a second field of activity in conservation finance is thus the review and reform of policy and regulatory measures to eliminate obstacles and counter incentives facing the flow of finance to conservation priorities. These obstacles exist at the “hard policy” end of the spectrum—e.g., the laws that impose tight risk-limitation requirements on large-scale institutional investors—to the soft end around perverse incentives (e.g., subsidizing the use of agricultural chemicals or damaging technology on fishing fleets; and even into corporate cultural practices (e.g., rewards to CEOs for short-term growth even when it is at the expense of long-term financial benefits).

Despite all of the initiatives highlighted above, it is clear that the challenge of aligning finance with conservation cannot be limited to setting aside resources and landscapes from exploitation and restoring those already degraded—the traditional heartland of conservation organizations. Instead, nature is threatened by the form and dimensions of economic activity. Addressing the challenge will require ensuring that regular economic activity does not continue to undermine biodiversity and ecosystem health while seeking to align the economy with the boundaries and requirements of natural systems.

Policy-making is largely the task of public authorities, whether at the international, national, or local levels. New policies and rules are crafted, and old ones are reformed in a constant process aimed at advancing public policy goals. As new priorities—like biodiversity conservation—come on stream, existing policies and regulations are reviewed and updated to ensure that they address these priorities. Many countries have reformed the policy framework in order to address the climate challenge. The process is now beginning for conservation of nature and ecosystems.

With conservation finance a new topic, the process of policy reform is only just taking shape, but all signs are that it will accelerate sharply in the coming years. A high priority is to review existing policies and regulations—particularly those affecting finance—to ensure that they do not offer perverse incentives to undermine biodiversity, as in the examples offered above.

International networks grouping public sector actors are also active. The Network for the Greening of the Financial Sector (NGFS) has grown rapidly since its foundation in December 2017, pulling together central banks and financial supervisors to accelerate the transition toward green finance solutions. Focused first on climate risk, it is now turning its attention to biodiversity. Its guidance to central banks on how responsibly to invest their endowments is already having a strong positive effect. The European Union has adopted an action plan on sustainable finance, including green labelling of financial products and the development of a new EU Biodiversity Strategy.



In addition, the European Commission has put forward a European Green Deal that includes a chapter on biodiversity. And the recently formed Coalition of Finance Ministers for Climate Action, though not yet focused on biodiversity, could provide a model for the future.

However, it is a broadly shared view that progress, while encouraging, is still inadequate in pace and scale. Policy reforms are welcome but often move at a slow pace due to the complexities of the policy process, the requirement for political compromise, and strong resistance from incumbent interests. The CBD process, involving the global community of states, moves at a pace that simply cannot keep up with the rate at which the problems grow more menacing. Given the trends in biodiversity loss and the breakdown in ecosystem services, it is important to move with urgency.

Support is growing for new norms and standards that will, it is hoped, quickly become widespread in public policy and a requirement for corporate value chains. One of the most promising is the proposal to develop a “Net Gain” pledge in which corporations (and, possibly, public works projects) would pledge that biodiversity and ecosystem services would be better off following the activity than it was before—either in the area where the activity takes place or, through offsets, in another location. Such new standards could rapidly become an expectation of investors or governments, including through their public procurement programs. The idea of a “Net Gain” norm builds on the Mitigation Hierarchy in that it moves from an analytic and measurement approach toward an increasingly directive norm. In cases where a net gain is secured through the purchase of biodiversity offsets, the IUCN policy on the subject provides useful guidance.

4.3 Positive Disruption

For the challenges to be met at a scale and pace commensurate with the scale of biodiversity loss and the pace of negative trends, action by the public sector and by capital markets must be subject to a far higher level of demand from civil society and the public. This “disruptive” action rejects the patient and linear approaches to change in favour of moves that have a transformative effect. The attention of these actors is increasingly focusing on the impact of finance on biodiversity, and a wide range of tools is being used. Voluntary action by private actors, often impelled and encouraged by civil society, can be a necessary accelerator of transformation. Earlier in this chapter, the slow and tedious pace of progress in international negotiation and consensus building was lamented. To stimulate that pace, it has been argued that policy and rule changes are necessary; but the reality is that present policies and rules benefit strong incumbent interests, and these defend their short-term privilege over the wider public benefit of change. The simple fact is that serious change only comes at that point where the advantages of the change are seen by political powers to outweigh the political advantages of the status quo. However, at that stage, change can come quickly.

In the meantime, a range of things is happening that suggest a fundamental shift may be on its way. The decision by eight major insurance companies to no longer insure fishing fleets that indulge in illegal fisheries is one telling example. So, too, are the moves by large-scale institutional investors, such as the decision by the Norwegian State Pension fund to divest from fossil fuel companies. Another example is a certification from the Marine Aquarium Council (MAC) for trade in ornamental fish designed for insurance and air cargo companies. This trade is significant in the Asia Pacific region.



On the civil society end of the spectrum, there is a wide range of activities. Some are cooperative, such as the effort to promote and launch a “No Net Loss” or “Net Gain” standard for corporations and value chains, mentioned above. Others channel the frustration, fear, and impatience of the general population at the slow pace of progress. Movements like the Extinction Rebellion that have recently been attracting attention, particularly in Europe, specifically call for disruptive action; their membership is not just made up of those who block bridges or public squares, but increasingly by doctors and lawyers ready to use the full arsenal of tools at their disposal to push for early change. Many other examples exist or have flared up at times, only to die back as quickly, such as the Occupy Wall Street movement after the global financial crisis in 2008–2009.

Disruptive action can be positive if it levels the playing field and counters the weight of industrial lobbies. It often represents genuine concern asking only to be channelled into positive pathways of change.

Other NGOs are mounting “name and shame” campaigns aimed specifically at financial institutions—for example, those who fund land clearance for beef and soy development in Brazil, or those that manufacture and promote carcinogenic pesticides in European countries. Fish Tracker, for example, supplies investors with detailed and accurate data on the fishing companies in which they are thinking of investing, thus giving them the chance, through their investment decisions, to reward responsible companies and punish those that undermine ocean biodiversity.

China has seen a growth in civilian actions, a large part of which relate to complaints about lack of compliance with environmental regulations, the impact of industrial pollution, or unsustainable or inequitable use of natural resources.

Disruptive action can be positive if it levels the playing field and counters the weight of industrial lobbies. It often represents genuine and widely shared concern asking only to be channelled into positive pathways of change.

4.4 China Overseas and Internationally

Developments at the international level must, of course, include the actions of China beyond its frontiers. As a massively important investor, the role of Chinese finance sector players is a key factor in determining the chances for a rapid transition to sustainable financial practices linked to biodiversity. China’s overseas investment takes many forms and operates across a wide spectrum comprising the Chinese government, policy banks, state-owned enterprises, and private sector financial actors. Especially since its adoption of strong green finance measures, China is looking increasingly both at best practice internationally in the full range of norms and standards linking finance with biodiversity conservation, and extending the standards required in China to the investment of Chinese investors across the globe. Increasingly, the “social licence to operate” will depend on value chains that respect and restore biodiversity and invest in the resilience of natural systems. Increasingly, also, those that ignore these requirements risk facing an ever-stiffer backlash.

5. FRAMEWORK, MAIN TOOLS, AND CHALLENGES OF CHINA'S CONSERVATION FINANCE

The green financial system in China has developed rapidly since 2015. The concept of green finance has not only permeated the national development plan and policy, but also received a broad response at the local government level. The green financial policy system is becoming more and more abundant, and the construction of the relevant market infrastructure is also advancing. For financial institutions and investors, more and more attention has been paid to green development and green industry. Green investment action has become a new hot spot, and the active development of green financial instruments and green financial products has become a new option for the industry. As a part of the green financial system, conservation finance and its importance have been gradually recognized by people, while still facing many challenges.

5.1 Conservation Funding Sources in China

Despite the gradually increase in private capital investment, the current funding for China's conservation activities is still heavily dependent on public sectors, including government finance and bank loans based on government credit.

5.1.1 Government Finance

Government finance includes special funds from the central government, funds, investment, and appropriations (mainly by provincial or local governments). Taking soil remediation as an example, the specialized fund for preventing soil pollution has been set up in 2016, and its total investment number in 2019 is 5 billion yuan. Any soil remediation project is able to share the specialized fund for preventing soil pollution as long as it has been included in the "program library" of the Ministry of Ecology and Environment (MEE). When the funding has been allocated from the central to the local level, the finance department at the provincial level will be (jointly with the local environmental protection department) in charge of the funding and will supply some funds depending on the local fiscal situation.³²

Table 5.1 The distribution of the special fund for soil pollution control in 2019 (ten thousand yuan)

No.	Province	Total	No.	Province	Total
1	Beijing	184	17	Hubei	26,919
2	Tianjin	1,409	18	Hunan	57,462
3	Hebi	29,382	19	Gongdong	31,375
4	Shanxi	4,442	20	Guangxi	34,147
5	Inner Mongolia	14,255	21	Hainan	3,828
6	Liaoning	6,555	22	Chongqing	4,907
7	Jilin	2,787	23	Sichuan	10,281
8	Heilongjiang	4,264	24	Guizhou	42,582
9	Shanghai	1,365	25	Yunna	70,804
10	Jiangsu	15,736	26	Tibet	886

³² Notice from the Ministry of Finance on Printing <Management Method of Special Funds for Preventing Soil Pollution>

11	Zhejiang	29,240	27	Shanxi	15,930
12	Anhui	8,692	28	Gansu	12,525
13	Fujian	12,810	29	Qinghai	12,857
14	Jiangxi	12,917	30	Ningxia	1,271
15	Shandong	18,434	31	Xinjiang	1,127
16	Henan	10,627	Sum		500,000

5.1.2 *Financing With Local Government Credit in Financial Markets*

There are two ways of financing with local government credit:

The first way is bonds issued by local government. They can be divided into general bonds and special bonds. General bonds are included in the public budget to balance the deficit; special bonds are included in the government funding budget, mainly investing in public welfare projects. It is planned to issue 2.15 trillion yuan of local government special bonds in 2019. These special bonds not only invest in key national strategies, infrastructure projects in extreme poverty areas, and major projects, including railway, highway, and water conservancy projects, but also in ecological conservation and environmental protection projects.

The second way is getting a bank loan. These loans are basically invested in companies that are included in the public-private partnership (PPP) programs. The loans are accommodated by policy banks or commercial banks based on the results of the risk evaluation.³³

5.1.3 *Corporate Financing From Financial Markets*

There are two kinds of corporate financing models. The first is borrowing from banks or issuing stocks or bonds in the financial markets based on corporate credit, which is currently the most common. The second is obtaining project-based financing from the market, used mainly for projects with a stable cash flow.³⁴ Industrial Bank, for example, helped a state-owned water company obtain project funding at a relatively low cost by issuing 800 million yuan of green sustainable medium-term bonds in the China Inter-bank Bond Market.

In the capital market, the issuance of green bonds has expanded rapidly in recent years. In 2016, the domestic green bond markets had 51 bonds representing a value of 205.2 billion yuan in total. That number has increased to 222.2 billion yuan in 2018 with 139 bonds, and reached 360 billion yuan of green bonds in 2019. With the rapid development of the Green Bond Market, some large enterprises are finding it easier to obtain financing by issuing bonds.

In general, the difficulty of financing for ecological and biodiversity conservation is still widespread.

³³ According to the National Development and Reform Commission (NDRC), in May 2015, NDRC has established a national-level PPP project database, and 1,043 projects with a total investment of 1.97 trillion yuan have been announced at the first round. 1488 other projects with a total investment of 2.26 trillion yuan have been announced at the second round. As of the end of July 2016, 619 projects among the announced projects were contracted, accounting for 100.91 billion yuan in investment. Of these, 136 projects focus on sewage and garbage treatment, accounting for 29.8% of the total.

³⁴ Generally, the funding side will require the funds to be closed operation: the company shall open a bank account for the supervision of the project funds, collecting the project income and the government paid funds. The income would be used with a priority for the loan repayment or repayment deposit.



- Ecological restoration and biodiversity projects often require massive investments. Taking soil remediation as an example, the general investment amount of roughly 1 to 10 billion yuan for each soil remediation project is totally over the capacity of most private capital entities. Due to the lack of business models, sufficient knowledge, and policy guidance, few private equity and venture capital funds have entered the field of conservation investment. In addition, insurance product design and service face difficulties due to the lack of specific operability tools and methods, which also hinder the development and innovation of financing models.
- Green funds have limited investment in ecological protection. In recent years, some provincial and municipal governments have established government-led guiding green funds, and some market-oriented green funds have also emerged. But these two types of investment funds are not sufficient to support ecological protection investment. There are also some non-profit funds that invest little in this area due to their widespread attention and limited funding sources. Take the China Environmental Protection Foundation as an example. In 2018, the total assets of the foundation were less than 200 million yuan, and the amount of donations accepted in 2018 was only 120 million yuan. At the same time, the foundation's focus is quite extensive, including green recycling, green travel, green innovation, and ecological poverty alleviation. The funds that can support ecological protection are quite limited.
- Investment from green credit and green bonds is insufficient. Since 2015, green development has been put on the central and local governments' agendas. The central bank, financial supervision department, and local government have introduced measures to encourage and support banks to launch green credit service. Some large and medium-sized banks have increased their green credit. Till June 2019, the green credit balance in 21 banks in China has surpassed 10 trillion yuan. However, regardless of the increasing amount of green credit, the investment is mainly focused on infrastructure such as transportation and energy. Although big banks have already been paying attention to ecological conservation, the green finance principle is hard to translate into practice due to the poor analysis ability of conservation projects of loan officers. In terms of the use of green bonds in 2018, only 5.3% of the funds were invested in pollution prevention, ecological protection and climate change, and the amount was only about 10.6 billion yuan.³⁵
- Most ecological restoration projects are carried out by small and medium-sized private enterprises, who have difficulty obtaining qualifications to issue green bonds in the market. Bank loans for ecological protection rely mainly on the credit of enterprises, and most of the loans are working capital loans lasting one year, which does not match the implementation cycle of investment projects.
- Due to the shortage of supply in the finance market, it is quite common for large upstream enterprises to default on payment to small and medium-sized downstream enterprises in the ecological conservation industry. There are also companies engaged in ecological conservation that only rely on profits from other businesses to subsidize their ecological conservation investments.

³⁵ Source: Wind Financial Database, Central University of Finance and Economics.

Table 5.2 Main funding sources for China's conservation projects

Sources	Application frequency (*very few; **few; ***moderate ****many)
PE/VC	*
Bank loan	****
Issue stock	*
Issue bond	**
Investment fund	*
Charity foundations and NGO	*
Private lending	**
Account receivable	***
Financing lease	*
Trust foundation	*
Non-environmental business subsidies of enterprises and public welfare programs	***

5.2 Challenges in Conservation Financing in China

5.2.1 How to Establish a Sustainable Business Model to Attract Private Capital

As a matter of fact, there is still a lack of effective business models in the field of ecological conservation. Conservation finance features positive externalities, while the difficulty of attracting private capital lies in establishing a stable and sustainable business model. From the perspective of international experience, some conservation projects have certain investment incentives, but the significance of such incentives is not universal. Taking soil pollution governance as an example, in recent years, due to intensified legal enforcement³⁶ under the pressure of legislation and environmental regulation, some enterprises (especially foreign-funded enterprises) have taken the initiative to control contaminated soil within their capacity.

In first-tier (and some second-tier) cities, land is valuable enough for investors to recover their investment—or even gain profits—in soil pollution remediation projects through land transfer.

³⁶ China's soil pollution prevention and control law came into effect on January 1, 2019. The law stipulates the responsibility of government and land users for the protection of unpolluted land and the treatment of polluted soil. "The competent departments of ecology and environment (CDEE) at or above the municipal level shall, in light of the discharge of toxic and harmful substances and other conditions, formulate a list of key supervised entities for soil pollution in their jurisdictions, which shall be disclosed to the public and updated in due course." The law requires key regulators of soil pollution prevention to strictly control the discharge of toxic and harmful substances and report the discharge to the CDEE on an annual basis. To formulate and implement the self-monitoring plan and report the monitoring data to the CDEE. "Land plots listed in the list of soil pollution risk control and remediation for construction land shall not be used as land for housing, public management and public service." "The holder of the right to the use of the land shall take effective measures to prevent and reduce soil pollution and shall bear the responsibility for the soil pollution caused by it according to law." In particular, the law obliges those liable for soil pollution to perform remediation. If the liability for soil pollution cannot be ascertained, the land use right holder shall be responsible for the remediation. This means that in addition to the production and operation process, enterprises must monitor soil pollution and have the responsibility to repair; Polluted land can only be transferred if it is restored and turned into "clean land."



Therefore, both local governments and enterprises have an incentive to invest. However, the cost of remediation of contaminated soil is still high enough that local governments or enterprises can only manage those issues in installments.³⁷ The issues are more serious in some third-tier and fourth-tier cities, especially in rural areas. With limited space for land appreciation and widespread local financial constraints, plus the fact that it is hard to identify the liability or the entities are incapable of paying (for example, some mining enterprises have been dissolved or gone bankrupt), the lack of funding has become a huge obstacle to the remediation of contaminated soil.

5.2.2 How to Establish Incentive and Restraint Mechanisms for Financial Institutions and Large Institutional Investors

We found that, in a few successful cases in China, financial institutions had failed to play a supportive role in deploying comprehensive utilization of resources to raise funds for the operation of conservation projects. For example, in Sishui, Shandong province, a company has invested more than 200 million yuan in the restoration of abandoned mines. This investment is mainly covered through the comprehensive utilization of tailings and waste resources and the development of ecological agriculture and tourism industries. Another example is that a company has invested 6 billion yuan in Kubuqi desert's management over the past 30 years. It has also made up for the cost of desert management and ecological restoration with the profits from agriculture, animal husbandry, health and wellness, ecological industry, photovoltaics, and ecological tourism. In this business model, financial institutions had failed to play a role because firstly, in the risk management framework of existing financial institutions, green assets created cannot be valued or used for mortgage guarantees. Secondly, financial institutions lack reorganization and management capability in this integrated business model. Thirdly, the financial institutions lack awareness of the challenges brought by future environmental changes to their own and lack the motivation to actively participate in environmental risk management.

Financing is even more complicated for projects involving biodiversity conservation, as it involves a wider range of sectors and policy tools, and it is harder to measure externalities. For financial institutions and large institutional investors, identifying and managing environmental risks is also a new topic.

5.2.3 How to Mobilize the Whole Society to Support Ecological Protection and Biodiversity Conservation Activities

Ecological protection and biodiversity conservation are systematic efforts related closely to public recognition of ecological protection and science, investors' social responsibility, scientific research ability, public education, and the role of NGOs. Ecological protection and biodiversity conservation not only require coordination of different policies but also need further systematic governance and regulatory innovation.

- One key issue is resolving the conflicts among ecological and biodiversity conservation, and the development of local economic and residents' individual interests. Because they concern the vital interests of residents, conservation activities often produce such

³⁷ According to our research, the cost of general organic pollution repair is 300 ~ 500 yuan / M³. If the land was polluted by oil tank is leaking, the repair cost is 1,000 ~ 2,000 yuan / M³.

conflicts as “humans and animals fighting for land” and “humans and animals fighting for food.” Especially for less-developed areas, this kind of conflict is more prominent. Local governments lack intentions to address problems of climate change, environmental protection, and biodiversity conservation, while institutions and volunteers who are specifically responsible for conserving biodiversity lack the power or capacity to deploy resources.

- Another critical concern is restraining enterprises’ investment in non-green projects or environmentally damaging projects. As the main participants of the market, enterprises play an important role in conservation. At present, the primary basis for investment decision making for many enterprises is profit and investment payback period: they rarely consider the impact on the ecosystems and the environment. Only by adjusting current fiscal and finance policies promptly and reducing financial investment activities that are not conducive to ecological protection—including internalization of environmental externalities costs, reduction of output and increase of costs so as to reduce the return on investment of polluting and damaging ecological projects—can a green capital flow direction be formed in the whole society.
- In addition, it is important to attract philanthropic foundations and other non-profit organizations to participate in ecological conservation activities. As of April 8, 2019, there were 5,599 charitable organizations in China, of which 1,521 were eligible for public offerings. Public attention to charity activities is very high. 20 Internet fundraising information platforms designated by the ministry of civil affairs received more than 8.46 billion hits, followers, and participants in 2018. For non-profit organizations, the return on investment and the recoverability of funds are not the main focus. The key to attracting them to enter the field of ecological conservation is to let investors know the use of funds and social value in a timely way. Therefore, transparency and validity of information should be guaranteed. Meanwhile, by relying on their expertise and financial strength in the field of ecological conservation, these institutions can serve as a bridge for the government to open up private capital and financial institutions. These institutions can not only provide professional advice for project planning and program implementation, but also provide innovative models and approaches for investment and financing participants. In this respect, some successful experiences from abroad can be used for reference by China.
- It will also be necessary to improve the understanding of ecological conservation in society more broadly. The conservation of ecology and biodiversity by governments alone is clearly not enough and requires the participation of society as a whole. At present, China has reached a social consensus on environmental and ecological protection while without making it a priority. In China’s practice of conservation investment, funds are mainly invested in ecological restoration activities (after-treatment), with little investment in prevention; the relevant government departments attach great importance to pollution control in special fields such as soil, water, and atmosphere, but pay less attention to the conservation of whole ecosystems, including biodiversity. On the other hand, the lack of expertise and capacity of local governments makes it difficult to improve the efficiency of the use of ecological protection funds. At the same time, community publicity and education to the public are also relatively weak, so that the volunteers’ activities of ecological conservation lack a broad social foundation.



5.2.4 How to Incorporate a Gender Perspective Into the Development of Conservation Finance and Let Women Play a Role

In view of the extensive knowledge and practice of climate finance, a wealth of ideas and suggestions for examining climate finance from a gender perspective have emerged, which are worth learning from, but also reflect significant gaps and problems.

First, the international community has paid long-term attention to climate finance and developed a series of mature financial mechanisms, tools, and methods to address the mitigation and adaptation needs of climate change. Based on the specific detailed data and practical cases regarding climate finance sources and channels, as well as the corresponding projects and participants, the integrating of a gender perspective is more smooth and systematic in climate finance. However, conservation finance is still in the initial stage of research and practice, and there is still no broad consensus on its basic definitions, standards, concrete mechanisms, tools, and methods. At present, we can only affirm in principle the importance of a gender perspective. Further demonstration and implementation are still needed to include a gender perspective in the long-term research scope.

Second, the current focus on gender equality in climate finance starts with ensuring women have a voice and priority in accessing climate finance support, and ensuring that available climate funding is used and allocated fully with regard to the needs of women's groups (which is also in line with the requirements of most funders). At present, conservation finance is in urgent need of solving the problem of leveraging more funding, especially establishing a close cooperation mechanism with all sectors of society. Therefore, we believe that the gender perspective in conservation finance should focus on how to promote the use of gender equality concepts and principles in investment and financing decision making in financial sectors, and make full use of women's attention and cognitive advantage on environmental, social, and governance (ESG) issues, so as to achieve two objectives: 1) to make ecological conservation a priority issue for the entire financial system; 2) based on the existing experience and practice of climate finance, the needs of different vulnerable groups (including women) should be fully considered in the use and allocation of financial resources, and the principle of gender equality should be incorporated into the whole process of planning, implementation, monitoring, and assessment of conservation specific projects.

6. OVERALL PLAN TO PROMOTE CONSERVATION AND BIODIVERSITY FINANCE IN CHINA

Ecological conservation (restoration) has several characteristics, including large-scale investment, long payback periods, and indirect income. The externalities of biodiversity conservation projects are more extensive, involving more individuals, more complex situations, and difficult-to-measure environmental benefits. At present, financial institutions and large institutional investors generally pay little attention to the protection of ecosystems and biodiversity and lack the proficiency to identify the benefits and risks of projects. In order to make the ecological protection investment more attractive and reduce the damage of traditional financial activities to the ecological environment, a financial framework is needed to establish from the dimensions of financial institutions, administrative departments, relevant policies, and financial markets. This study seeks to propose plans on establishing an environment for conservation finance, and stimulate the incentives for financial institutions and large-scale institutional investors from internal motivations and external restraints.

6.1 Improve the Efficiency of Using Government Financial Funds

6.1.1 Identify Key Areas for Conservation

The basis for financial instruments getting involved in conservation investments is that the security and profitability of funds will be guaranteed. This requires: 1) the economic benefits of the conservation activities be clear and measurable; 2) The green assets have liquidity; 3) if the first two cannot be achieved, then the investment requires clear social benefits that are helpful to its branding and business strategies. Examples include the Ant Forest line from Ant Financial, and some corporate donations to conservation-related funds.

Not all ecological conservation work is amenable to financial institutions, and some work can only be undertaken by governments. Therefore, the government needs to identify the focus areas that finance can support and establish an enabling policy framework for the sustained investment of financial institutions and private capital. One potential approach is that the MEE can prioritize the social impact of various conservation measures and the urgency of their capital demands, based on the short-and long-term economic and social values of different conservation work. In this way, financial institutions and private capital will be able to identify the key areas of ecological conservation and biodiversity conservation and choose the direction that suits them. The government department in charge of investment (NDRC) can cooperate with the MEE to draft an investment taxonomy of ecological and biodiversity conservation.

6.1.2 Establish a Fiscal and Taxation Policy System That Encourages Financial Institutions and Private Capital to Increase Input in Conservation

China has established a quite comprehensive ecological compensation system and formulated special fund management measures for the conservation and rehabilitation of soil, rivers, lakes, and natural forests. The next step requires: 1) testing the effectiveness of these compensation funds and special funds; 2) linking some public funds with financial institutions. This will include clarifying that projects supported by special funds can get preferential policy-oriented financial support and informing financial institutions of these projects



supported by special funds; granting appropriate interest rates on loans or issuing green bonds to some important ecological rehabilitation and conservation projects; considering granting certain tax concessions to financial institutions and investment institutions that have made outstanding contributions in the ecological field; subsidizing part of insurance premiums to enterprises that purchase green insurance in the field of ecological conservation; and allocating more funds to support voluntary actions and education activities for raising knowledge and awareness among public.

6.1.3 Other Supporting Policies

Many local governments have set up government industry investment funds. The funds are mainly focused on scientific and technological innovation and large-scale infrastructure construction, with little allocation to conservation. Requirements about allocating a certain proportion of funds to the ecological field should be defined. The assessment requirements of industrial investment funds should be adjusted based on the conservation characteristics. Local governments should set up green industry funds to stimulate private investment in environmental enterprises and projects. Policy banks should be required to support the development of ecological and biodiversity conservation.

Considering the limited amount of land available for construction in China, private investment can be directed to conservation through land policy. Several regions with successful ecological management can be selected to pilot on the award and compensation policy for land restoration, and the restored land can be traded across provinces as cultivated land.

In addition, to address the limited capacity for collecting and analyzing the environmental cost of the projects, the government can purchase public services to establish a public environmental cost information system, and provide an information base for decision-makers and investors in the whole society.

6.2 Strengthen Coordination Between Macro-Financial Policies and Financial Regulatory Policies

6.2.1 Monetary and Credit Policies

In the current green finance field, the People's Bank of China has provided some policy support for commercial banks to develop green credit and the construction of green finance reform innovation pilot areas, including 1) re-lending; 2) Green Bill discounting; 3) supporting and opening up green channels for enterprises to issue green debt financing instruments; 4) adding green credit indicators in Macro Prudential Assessments; 5) release the "Green Financial Development Report"; and 6) establish green credit statistical system. In the future, the People's Bank of China should give prominence to ecological and biodiversity conservation in its green finance support policies. Ecological and biodiversity conservation can also be listed as a separate indicator for policy support.

6.2.2 Financial Regulatory Policy

Guide financial institutions and large institutional investors through the adjustment of financial regulatory policies. These include: 1) expanding the scope of green credit

instruments, allowing banks to develop eco-asset-backed credit products on a pilot basis; 2) advocating and promoting ESG investment and establishing ESG evaluation system for listed companies; encourage large institutional investors such as sovereign wealth funds, insurance companies, and large fund companies to take the lead in developing ESG investments; 3) establish an evaluation index system for green credit, and launch green rating pilots for commercial banks; 4) allow the issuance of green bonds using ecological assets such as restored land and formed ground attachments.

6.3 Exert the Role of the Capital Market to Support Conservation Finance

The Chinese capital market is still deficient in supporting conservation investment and financing. On the one hand, some objective factors have led to this issue, including the long operation cycle of conservation projects, low or no return, the small scale of environmental enterprises, and instability of cash flow. On the other hand, there are some problems in the capital market itself, including the issuance process of securities, investment incentives, and the proficiency of institutions. Several measures are available to solve these problems: 1) strengthen support and services in the listing of environmental enterprises and set up green channels for initial public offerings (IPOs), refinancing, monitoring, assessment, and reorganization of such enterprises; 2) consider that most of the environmental enterprises are asset-intensive, so equity and bond financing can be moderately loosened up on the use of funds raised; 3) strengthen support for environmental enterprises to be listed on the National Equities Exchange and Quotations (NEEQ) market; 4) enhance the professional and technical capabilities of financial institutions. securities companies, fund companies, and other securities industry institutions may set up a Conservation Finance Department and Green Commissioner in reference to the bank, to enhance their capability building in the assessment, screening, and investment of ecological conservation projects. Improve the incentive mechanism and link environmental project investment with individual performance; 5) Improve the professional capabilities and credibility of third-party assessment agencies by unifying the filing process, clarifying the withdrawal rules, and strengthening the credibility of third-party agencies.

6.4 Improve the Basic Conditions of Conservation Finance

The development of conservation finance is a systematic work that requires enabling relevant environment and conditions. Conservation finance serves the protection of ecosystems and biodiversity; thus, if the local government does not have a strong motivation in environmental protection, and there are not many conservation projects, conservation finance would have nothing to discuss. In other words, the development of conservation finance depends not only on the idea and behaviour of financiers but also on the dynamics of conservation.

6.4.1 Strengthen the Rule of Law and Provide Stable Expectations for the Development of Conservation Finance

China has formed a relatively comprehensive system for ecological and environmental protection policies. However, the existing legal framework is not yet perfect, and there is a certain degree of overlap and lag in authority between departmental regulations; In addition, conflicts of interest are prominent between central and local government, as well as between the government and the market. Under the pressure of the central government's performance evaluation, local governments have contradictory incentives: On the one hand, there is an



urgent need for green development and environmental improvement; on the other hand, in order to maintain a certain economic growth and fiscal revenue, there is also an incentive to tolerate industries that damage the environment but have a significant contribution to tax revenues. Thus, local governments are actively developing emerging green industries while imposing limited environmental regulations on existing enterprises. Under this scenario, we need to further improve the ecological and environmental protection laws and regulations, clarify and increase the liability of environmental polluters, and strengthen supervision and law enforcement.

6.4.2 Addressing Measurement of the Externalities of Ecological Investment

An important reason for the lack of motivation of conservation finance is the distortion of price signals. Therefore, it is necessary to make explicit the hidden benefits of “lucid waters and lush mountains” and the costs of pollution. The government needs to reconstruct the pricing mechanism by defining the property rights of carbon emission and pollutant discharge, and addressing the charge for the external benefits generated by conservation projects. The reform should provide policy and market signals to reduce the economic value of resource-intensive and carbon-intensive investment, changing the investment preference of financial market participants. The concept of natural capital liability (NCL) put forward by the British company Trucost could be referred here. NCL has the potential to quantify the environmental costs of air pollution emissions, water pollution, and solid waste, and assess the scale of “negative externalities” that are not currently reflected in market prices. Another example is expanding Microsoft’s promise to repay its past climate debt to estimate and repay a company’s past nature debt. Meanwhile, it is also necessary to establish the concept of “ecological capital” to quantify the value of ecological assets and reflect its positive externalities into the market.³⁸ On this basis, establish the valuation and trading mechanism of ecological assets to promote their circulation.

6.4.3 Establish the Inter-Department Coordination and Information Communication Mechanism

First, an inter-departmental coordination mechanism should be established between the ministries of ecology and environment, natural resource, finance, and other departments of macroeconomic and financial regulation. On this basis, promote the concept of conservation finance in the public sectors and ensure the consistency and stability of conservation finance policies. Establish a joint meeting system for ecological and biodiversity conservation, and establish a green channel for private financing in key conservation areas.

Second, comprehensively consider the demand for ecological protection, economic development, and social equity in key ecological protection areas, and put forward a package of policies to improve the quality and efficiency of conservation finance. Broaden financing ideas and increase the conservation synergy of conventional investment by carrying out policy coordination.

Third, build a mutual information communication and sharing platform among departments of industrial management, ecological and environmental protection, and financial regulation.

³⁸ This information system can serve as a decision-making reference for policy-makers in determining price subsidies, resource taxes, and pollution discharge fees, and can also be used by various investors in investment and credit decision-making.



Use this platform to foster timely communication of technical information, industry standards, and any illegal handling of ecological and environmental protection. China should make full use of the power of public supervision and assessment to provide timely feedback on policy implementation and improve the efficiency of government work.

6.5 Fully Utilize the Power of the Whole Society

More attention should be paid to the role of public governance while promoting private investment. The incorporation of public governance could relieve the public sector's governance pressure while improving conservation efficiency and expanding financing channels. In foreign countries, there are many successful cases of cooperation among financial institutions, investors, and large-scale environmental protection organizations. The latter not only provides available business plan for conservation but also uses its own grants to develop finance and marketing tools to reduce investment costs. Such “catalyst”- type cooperation allows financial institutions and investors to manage their investment risks effectively: it also fosters wider participation by sharing experiences. These successful experiences are worth learning from.

In addition, publicity and education should be strengthened to promote the full understanding of the importance of ecological and biodiversity conservation, especially the understanding among financial institutions, large-scale institutional investor executives and practitioners, and the people in the surrounding areas of reserves.



7. POLICY RECOMMENDATIONS ON PROMOTING CONSERVATION AND BIODIVERSITY FINANCE

The three recommendations below address different aspects of the conservation finance challenge. The first addresses understanding of the conservation finance and the top-level framework. The second addresses the optimal use of policy and market instruments to increase the flow of finance into activities that are favourable to the wise use of nature and natural resources while reducing the flow to harmful activities. The third addresses the governance and institutional framework required for the first two to be successfully accomplished.

7.1 Expand the Scope of Green Finance and Provide Strategic Guidance for Private Finance to Enter the Fields of Conservation and Biodiversity

Purpose: To improve the understanding of the importance of conservation finance and development path; and to integrate relevant concepts into major national plans.

7.1.1 Short Term

The existing green finance framework covers conservation, pollution control, efficient use of natural resources (energy saving and emission reduction, etc.), but lacks adequate attention to biodiversity protection. Governments, businesses, financial institutions, and investors need to raise awareness of conservation biodiversity. The green finance framework should be reviewed and incorporate the concept in relation to biodiversity. In addition, relevant content of conservation finance should be added to the investment guidelines and national plans, such as the 14th FYP.

Analyze the demand and supply potential of conservation finance and evaluate the effectiveness of existing environmental strategies, conservation finance practices, and public financial support. Develop and apply robust measures to assess the impact of both private and public finance on biodiversity and ecosystems, drawing on the best models currently under development or in use internationally.

Develop and apply the principle that public and corporate development activity must lead to “no net loss” of biodiversity, based on the mitigation hierarchy methodology or similar instruments. Where loss is unavoidable, it should be compensated by applying “biodiversity offsets” at least in proportion to the loss incurred in both quantitative and qualitative terms.

Based on a review of best practice in the use of strategic environmental assessment (SIA), fully apply SIA methodologies to public policies and programs, and to both public and private developments in areas of particular natural richness or in fragile ecosystems—and especially in relation to large-scale infrastructure development projects.

Draw on Chinese and international experience to explore the full range of available “nature-based solutions.”³⁹ China has a great deal of experience in mangrove protection, desert

³⁹ Nature-based Solutions are defined by IUCN as “actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.”

management, and other areas that fully integrated the protection of biodiversity. It is recommended to study these cases in depth, promote their successful experiences, convert the idea of developing “large human-made projects” in the past, and leverage the power of nature to conservation.

At the coming CBD, integrate key elements and recommendations of conservation finance and proposals in the relevant declarations and outcomes, and play a leadership role in introducing fresh innovations that will accelerate the political acceptability and importance of conservation finance. Examples are the development of a no net loss standard for corporate value chains, ideally including the following:

- The application of biodiversity mitigation hierarchy for land-use development
- Land-use planning for biodiversity (to identify high biodiversity value areas to avoid losses and areas to achieve gains)
- Closing markets for the sale and trade in wild animals and all endangered species
- Strategic environmental assessments to identify the actions to deliver no net loss for large-scale infrastructure development
- Natural capital-positive infrastructure planning and ecosystem restoration.

Further, there are now several convergent efforts tending toward the rapid establishment of a Task Force on Nature-Related financial disclosure, with a formal launch possible at the CBD COP. Drawing from the experience of the similar Task Force on Climate-related Financial Disclosure (TCFD) but with more ambitious terms of reference, China is in a unique position to lead and to establish conservation finance as a topic with the same standing and urgency as climate finance.

7.1.2 Mid and Long Terms

Incorporate biodiversity into spatial planning and eco-civilization planning. Identify the key areas for conservation.

7.2 Improve the Policy Framework of Conservation Finance and Establish a More Effective Incentive and Restraint Mechanism

Purpose : Internalize both the positive and negative impact of economic activities by improving the design of fiscal and taxation policies, investment policies, and financial policies, and thus provide stable investment expectations and market environment for financial and investment institutions.

7.2.1 Short Term

Define the criteria of ecological and biodiversity conservation projects to provide an investment benchmark for financial institutions and social investors.

Financial regulatory authorities (e.g., PBOC, CBRC, CIRC, and CSRC) should provide guidance to financial institutions, trust funds, insurance asset management companies, and other large institutional investors through credit and regulatory policy so as to emphasize the impact of their activities on ecosystems and natural resources.



Support commercial banks in considering the effect of loan targets' ecological protection as a factor for pricing. In addition, support the conservation finance innovation activities for "nature-based solutions" projects, which differ from engineering projects in financing with a very low chance of success in practice.

Evaluate the "green" activities and ESG performance of financial institutions and encourage the capacity building of financial institutions and investors on evaluating and managing the risk of "natural-based solutions."

Clarify the standard of environmental information disclosure and urge listed companies and financial institutions to disclose the conservation information of their projects. In addition, advocate and promote ESG investment in the capital markets. A useful next step would include how new corporate accounting standards are measuring nature, how some leading global companies are responding, and the practice and potential of Chinese accounting standards.

Encourage investment in conservation finance through fiscal measures. Pilot land and tax incentive policies in areas with significant ecological improvement.⁴⁰

Establish a non-profit environmental cost information system under the support of the Government Procurement System and improve the information access and analysis abilities of decision-makers and investors in conservation finance.

Guide policy-based financial institutions and government funds, including social security funds and industrial investment funds of governments at all levels, to increase support for conservation investment.

Improve the coordination mechanism between public funds and social capital, and increase the use of blended finance. Reduce the risk of conservation investment with the help of public funds with low return requirements.

Set green thresholds for both foreign procurements and investments, especially in the context of the BRI, to establish a green supply chain.

Strengthen the application of the precautionary principle, the duty of care principle and the "no net loss" principle in the value chain of enterprises.

7.2.2 Mid and Long Term

Establish a natural capital accounting system to provide standards and methods for the calculation of Green GDP. Apply the Green GDP as an evaluation benchmark in the promotion system for local officials when the accounting system matures.

Incorporate the measurement and calculation of the stranded assets' risk raised by biodiversity loss in the accounting system.

⁴⁰ Experience from South Africa: Landowners could deduct personal income tax if they could effectively manage and maintain the biodiversity on the land according to the appointment.

Regarding the situation that ecological losses are difficult to recover, explore a compensation mechanism based on the principle of “no net loss,” namely compensate ecological losses with “ecological protection behaviour,” instead of monetary compensation. In addition, take the “no net loss” principle as the next step in optimizing the ecological compensation system.

Establish a market-based mechanism for pricing, evaluation, and flowing the ecological assets, to promote the appreciation of ecological assets in the flow and attract more private capital to the field of ecological conservation. Based on the practical experience of carbon emissions trading pilot regions such as Beijing, Guangdong, and Shenzhen, introduce voluntary forestry carbon sink trading projects as offset projects in the national carbon emission trading market. To further internalize the positive externalities of ecological services, consider integrating the natural service value of wetlands, meadows, and other ecosystems in the eco-market when it is well established.

Adjust tax policies to enhance conservation. To ensure the effectiveness of fiscal incentives, the taxation and regulatory system should be coherent, and unreasonable incentives that harm biodiversity should be eliminated. Taxes on activities that undermine biodiversity should aim at behavioural change, as conserving biodiversity is more important than increasing tax revenue.

Undertake a comprehensive review of public subsidies. Globally, the scale of unreasonable subsidies to sectors harms climate change and diversity, including fossil fuels, is huge. Some countries are working to adjust subsidy policies. It is recommended to draw on experience from the green ecological reform of agricultural subsidies by the Ministry of Agriculture and Ministry of Finance. Undertake a comprehensive review of public subsidies in sectors such as agriculture, mining, manufacturing, power generation, and construction, to identify the subsidies that conflict with China’s industrial transition and harm the nature and biodiversity to accelerate the green transformation of industries in China.⁴¹ Introduce subsidy reforms that can promote the development of the economy and conserve biodiversity at the same time. Further optimize the economic leverage of China's fiscal subsidies.

7.3 Improve the Infrastructure of Conservation Finance by Strengthening the Systematic Management of Natural Resources and Eco-environment Protection

Purpose: Optimize the policy and market environment of conservation finance

7.3.1 Short Term

Strengthen the enforcement of environmental law and justice, especially enforcement in ecologically sensitive and fragile areas. Up to April 2017, there were 956 environmental resource courts in China, including the trial courts, collegiate bench, and circuit courts. Nevertheless, environmental justice in China still faces many challenges, including the imperfection of its legal basis and the difficulty in dealing with inter-regional cases, such as obtaining the evidence cross-regionally. To strengthen the legal enforcement in the conservation field, multiple actions should be taken, including clarifying the judicial interpretations of ecological and environmental damage, standardizing the inter-regional

⁴¹ http://www.gov.cn/xinwen/2016-12/19/content_5149900.htm[2020-02-03]



environmental jurisdiction system, and improving the evidence collection and enforcement system in environmental justice.

Establish a Corporate Eco-Environment Credit System to promote voluntary eco-friendly activities. Incorporate indicators about ecological compliance into the existing metrics of the Corporate Environmental Credit System, which was jointly established by the former Ministry of Environmental Protection and the Development and Reform Commission. Compliance behaviours regarding land use, resource extraction, deforestation, and the hunting and processing of wild animals and plants are potential indicators here.⁴² Linking this new credit system with financial sectors could improve information disclosure of eco-environmental compliance and thus be conducive to the practice of conservation finance (such as green credit). On this basis, consider further establishing an eco-environment credit enhancement mechanism. That is, under the certification of professional third-party organizations, companies that actively reduce the ecological impact of production activities or carry out eco-environment restoration activity can be awarded credit points additionally. This mechanism is designed to encourage companies to voluntarily take eco-friendly measures.

Further develop community-based conservation in China to solve challenges of residential livelihoods and community governance simultaneously and comprehensively. In addition, promote and pilot successful conservation financing and business models integrated with community solutions in poorer areas.

Support the development of a consulting industry in the conservation finance field to enhance the capacity building of financial and investment institutions in risk identification and decision making. Support and guide existing intermediaries, including credit rating agencies, asset evaluation agencies, accounting firms, law offices, data service companies, and consulting companies to develop third-party services related to conservation finance.

7.3.2 Mid and Long Term

Promote legislative activities that align with the development of conservation finance, and explore ways to increase of ecological protection responsibility of companies, banks, investors, and trustees in commercial bank law, securities law, securities investment fund law, and trust law.

Improve the environmental impact assessment system and strategic environmental impact assessment mechanism in China. Advance evaluation methods of ecological impact for construction projects, and scientifically evaluate their systemic impact on species survival, especially the impact on reproduction and genetics. In addition, pay more attention to the evaluation of indirect and long-term impacts.

⁴² http://www.gov.cn/gongbao/content/2016/content_5059107.htm [2020-02-03]