In collaboration with the International Institute of Green Finance of the Central University for Finance and Economics of China

WORLD ECONOMIC FORUM

Nature-Related Sustainable Finance in China: A Brief Review

BRIEFING PAPER

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Images: Getty Images

Contents

Executive summary

This briefing paper developed by the World Economic Forum's Nature Action Agenda, in collaboration with International Institute of Green Finance (IIGF), explores opportunities for Chinese financial institutions to integrate nature considerations more deeply into their portfolios.

Over half of global GDP is highly or moderately dependent on nature, with China particularly vulnerable – 65% of its GDP is at risk from nature loss. Yet, nature degradation persists, driven mainly by land- and sea-use changes, climate change, resource exploitation, pollution and invasive species. Public finance currently dominates biodiversity funding, while private sector involvement remains limited and often lacks effective risk management practices.

To mobilize private finance for nature as a powerful complementary source to public funding, policy plays a key enabling role by providing regulatory frameworks, tax incentives and risk mitigation tools that encourage private-sector participation. The Kunming-Montreal Global Biodiversity Framework further emphasizes the need for updated national biodiversity strategies.

This paper presents a landscape review of China's policy and market progress compared to key economies – Europe, Japan and the United States (US) – analysing sustainable finance policies across countries and throughout the finance ecosystem. Key observations include:

– **Varied approaches:** Europe and China utilize top-down policy frameworks, while the (US) and Japan rely on bottom-up, market-driven strategies.

– **Convergence of policy and financial instruments:** Climate-related issues are comprehensively addressed across all economies' policies and financial instruments in market, leading in maturity. Biodiversity is gaining recognition in sustainability policies; however, policy depth varies among economies, and market-based mechanisms are still in early stages.

Despite growing policy support and market expansion globally and in China, sustainable finance for nature remains in the early stages of development. The allocation of funds to nature-related themes beyond climate remains limited, and financial institutions continue to face significant barriers to scaling nature finance.

To better understand these barriers, this paper draws on interviews and workshops with 17 leading Chinese financial institutions. These engagements identified three core challenges: 1. a lack of credible, accessible nature-related data; 2. limited evaluation and pricing methodologies for nature-related impacts; and 3. underdeveloped business models with uncertain financial returns.

Addressing these challenges requires continued policy support to create robust market infrastructure, including disclosure systems, taxonomies and incentives for nature finance. In the meantime, Chinese financial institutions have begun exploring pathways:

– Leveraging emerging technologies such as artificial intelligence (AI) and satellite monitoring to improve real-time availability of biodiversity data and reduce risk assessment costs.

– Utilizing existing corporate data and sustainability disclosures to infer nature-related risks and opportunities, especially in the absence of standardized biodiversity metrics.

– Piloting innovative instruments, such as blended finance structures, insurance-backed risk-sharing mechanisms, and new forms of collateral like carbon credits, as a referable tool for nature credits – to enhance the bankability of projects that favour nature-positive outcomes and expand capital access, particularly for small and medium-sized enterprises (SMEs).

These early efforts lay the groundwork for scaling private finance for nature in China and globally, helping to bridge the biodiversity funding gap while supporting a resilient and sustainable future.

Introduction

As the world's second largest economy and a nation committed to green and high-quality development,[1] China plays a significant role in shifting the global economy towards a climate neutral and nature positive future. Globally, although parties to the Convention on Biological Diversity have agreed to mobilize at least $200 billion a year by 2030 for nature,[2] this goal remains both critical and challenging. The effort goes beyond funding for conservation – there is a pressing need to increase investment in business activities that reduce and prevent negative impacts on nature along the entire value chain.[3]

While government-driven initiatives lead in mobilizing finance for nature in China, a critical topic is mainstreaming nature's value in decision-making as nature is not yet a viable financial asset either domestically or globally. This briefing paper is a result of a scoping study jointly undertaken by the World Economic Forum's Nature Action Agenda and the International Institute of Green Finance (IIGF). It aimed at exploring opportunities for financial institutions in China to strengthen nature-related considerations in their portfolios.

For the purpose of this paper, some key terms are defined as follows:

- **Nature** is all life on Earth (and the term includes "biodiversity"), together with the geology, water, climate and all other inanimate components that comprise the planet.[4]
- **Sustainable finance** refers to the process of taking environmental, social and governance (ESG) considerations into account when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects.[5]
- **Green finance** is usually considered as included in sustainable finance, and broader than climate finance, in that it also addresses other environmental objectives and risks.

A critical moment for mobilizing private finance for nature

Nature and ecosystem services are the cornerstones of the economy, with over half of global GDP highly or moderately dependent on nature.[6] In China, this dependence is particularly pronounced, with 65% of the country's total GDP at risk due to nature loss.[7]

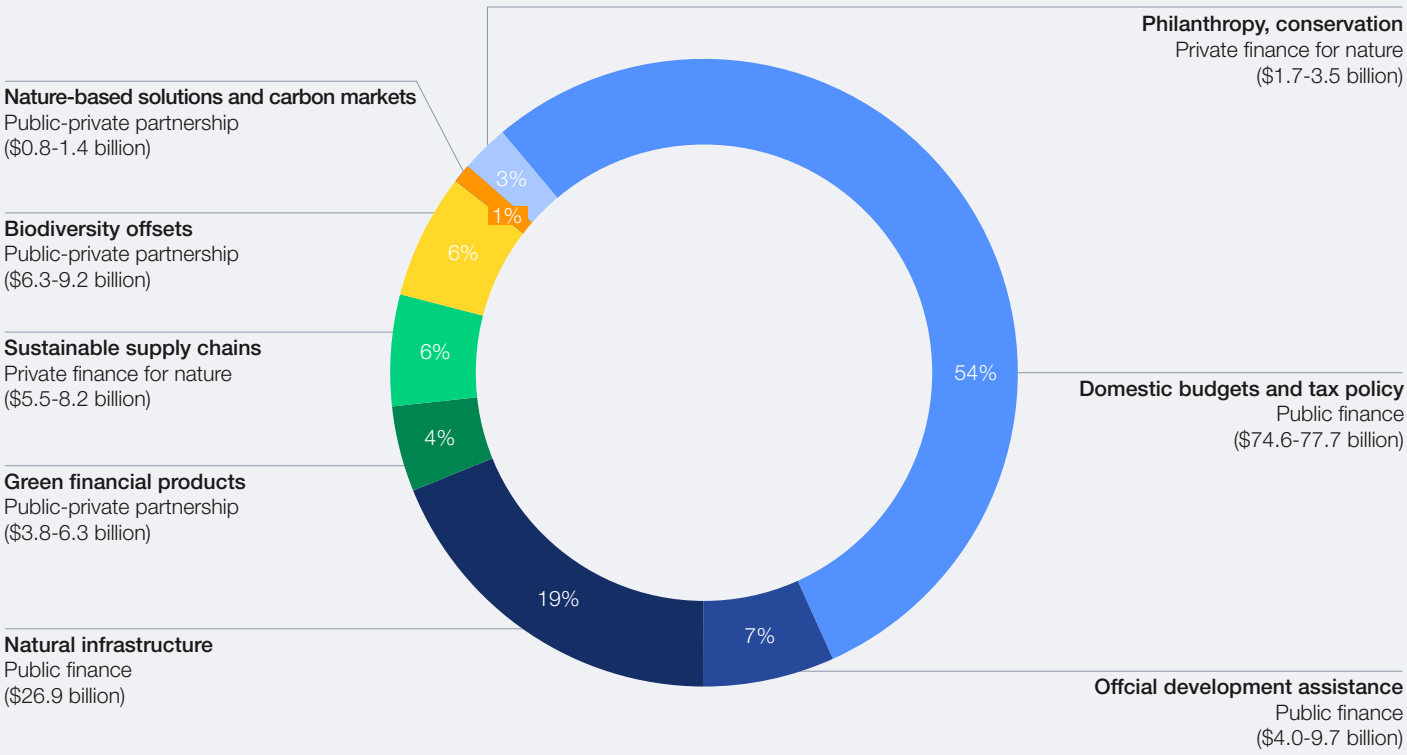
However, the natural environment continues to deteriorate, due mainly to five direct drivers over the past 50 years: 1. land- and sea-use changes, 2. climate change, 3. natural resource use and exploitation, 4. pollution and 5. invasive species.[6] Global efforts to reduce the impacts of these drivers are hampered by governance gaps, conflicting interests and insufficient funding, accelerating the loss of biodiversity.[8]

To reverse this trend, significant and effective financing is crucial. By 2030, the total global demand for biodiversity conservation finance is expected to be between $722 billion and $967 billion per year, while the current global funding for biodiversity conservation is about $124 billion to $143 billion per year.[9] This leaves a funding gap 6-7 times greater than existing investments, requiring strong collaboration between governments, financial institutions and businesses.

Currently, as shown in Figure 1, more than 80% of the world's biodiversity conservation funds come from the public sector, including government budgets and taxes (54%), official development assistance (7%) and natural infrastructure (19%).[10] While the private sector's participation in nature-related investments remains relatively small, its involvement is increasingly diversifying.

However, the effectiveness of managing nature-related risks is often overlooked, primarily due to challenges in quantifying their impact. This is a critical issue, as effective risk management is essential to steer private finance away from projects that harm biodiversity.[11] In fact, private finance for nature is not confined to investments directly targeting conservation. It also includes broader strategies that integrate nature-related considerations all through various financial sectors, such as biodiversity offsets, sustainable supply chains and risk management practices.

FIGURE 1 | **Current global funding landscape for biodiversity conservation (2019)**



Source: Global Canopy, The Little Book of Investing in Nature.

To support mobilizing more private finance for nature in China, this briefing paper aims to conduct a landscape review of China's policy progress and market trends in mobilizing private finance for nature in the global context, and explore opportunities to enhance the much-needed enabling conditions for scaling tangible financial solutions.

Policy as a key enabler

Compared to general financing channels, finance for nature and biodiversity often has longer investment return cycles and ecological restoration benefits whose economic returns are not directly evident.[12] To address this, policy plays an essential role in enabling private capital in addressing nature's decline. Governments must pursue policies – such as regulatory frameworks, tax incentives and risk mitigation mechanisms – that encourage private sector participation. These policies can help monetize the benefits of nature, create environmental markets and provide the necessary incentives to mobilize private funds.[9]

The Kunming-Montreal Global Biodiversity Framework calls upon all parties to update their National Biodiversity Strategies and Action Plans. Consequently, countries are increasingly focusing on policies related to nature. This paper analyses the current landscape of policies enabling private finance for nature from two perspectives:

1. **A cross-country comparison of key economies:** Analysing the focus and status of sustainable finance and ESG-related policies in China, Europe, Japan and the US, to illustrate a comparative picture of the progress made in China.

2. **An analysis across the sustainable finance ecosystem:** Analysing the coverage of value chain issues – from sustainability-related regulatory requirements for funders, environmental stress-testing by asset managers and environmental disclosure requirements for financiers, to environmental disclosure requirements for investee companies. The analysis also includes

sustainable finance taxonomies, green finance product labels and strategic financial planning (such as the EU Taxonomy and green finance development plans), with a focus on the Chinese market.

The analysis examines the extent to which nature-related issues are covered in sustainable finance and ESG policies in China, Europe, Japan and the US. It focuses on whether relevant policies exist, and evaluates the completeness of policy frameworks.

Further, using keyword frequency analysis, it measures the extent to which the five drivers of nature change identified by the Taskforce on Nature-related Financial Disclosures (TNFD) – namely climate change, pollution removal, resource use/replenishment, land/freshwater/ocean use change, and invasive species[13] – are mentioned. It provides insights into the gaps and opportunities in the development of policy for nature. (See details in Appendix A.)

From this analysis, four key observations emerge:

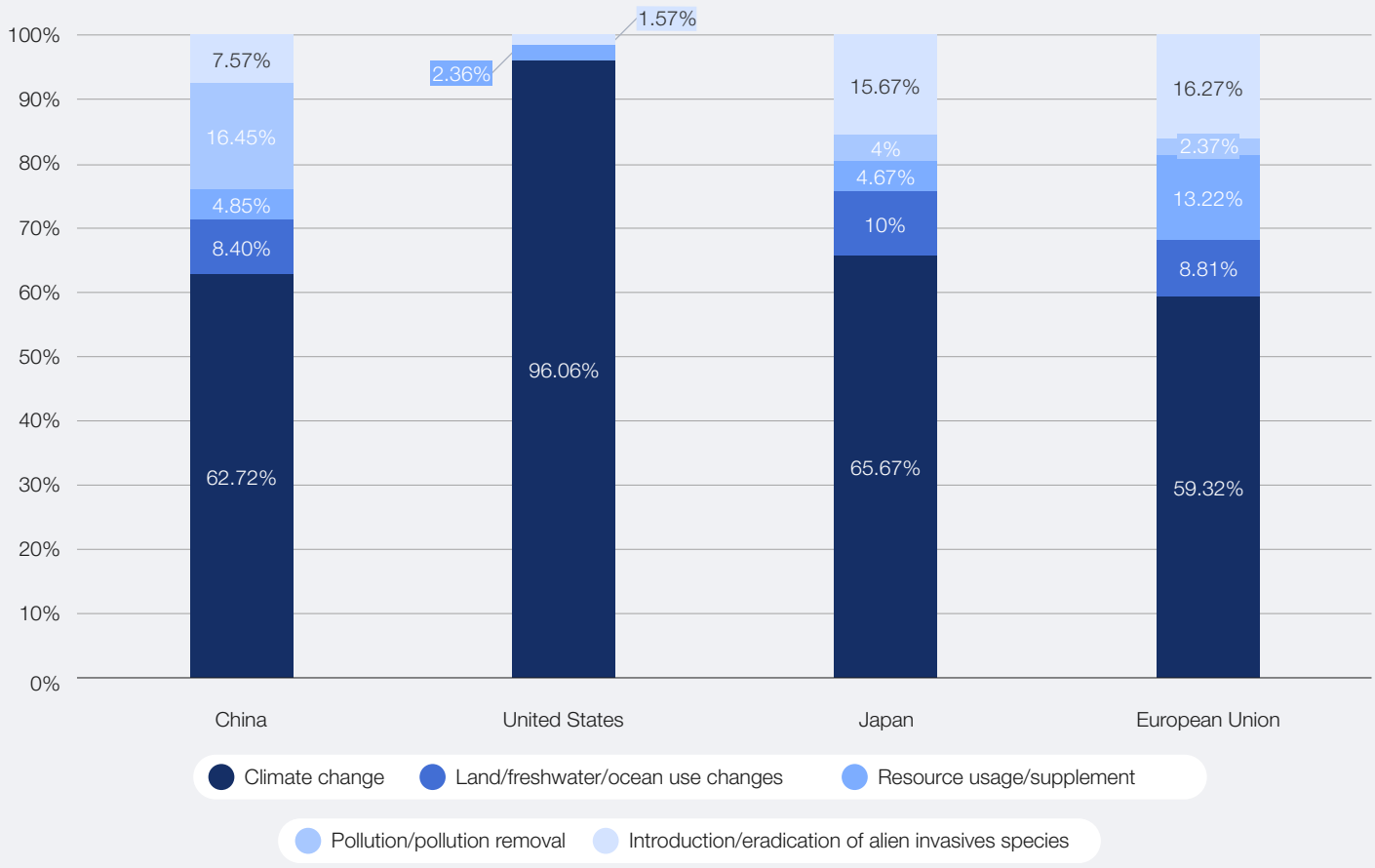
– **Diverse approaches:** Europe and China have adopted a "top-down" approach, which includes comprehensive policy frameworks that cover the entire finance ecosystem from funding sources to investee companies, complemented by strategic planning, taxonomies, product standards and other infrastructure. Meanwhile, the US and Japan emphasize industry self-regulation and market-driven "bottom-up" characteristics, which result in a more flexible policy landscape that evolves in response to private-sector initiatives rather than an overarching national framework.

– **Policy maturity:** Climate change topics are fully covered in the relevant policies of various economies, demonstrating much greater maturity than other drivers (see Figure 2).

– **Other drivers of nature change:** Within green or sustainable policies, the coverage of other drivers of nature change has been increasing, particularly regarding resource use/replenishment and pollution/pollution removal.

– **Biodiversity:** Biodiversity has emerged as another key theme in sustainability policies of certain economies, although the level of detail is still variable.

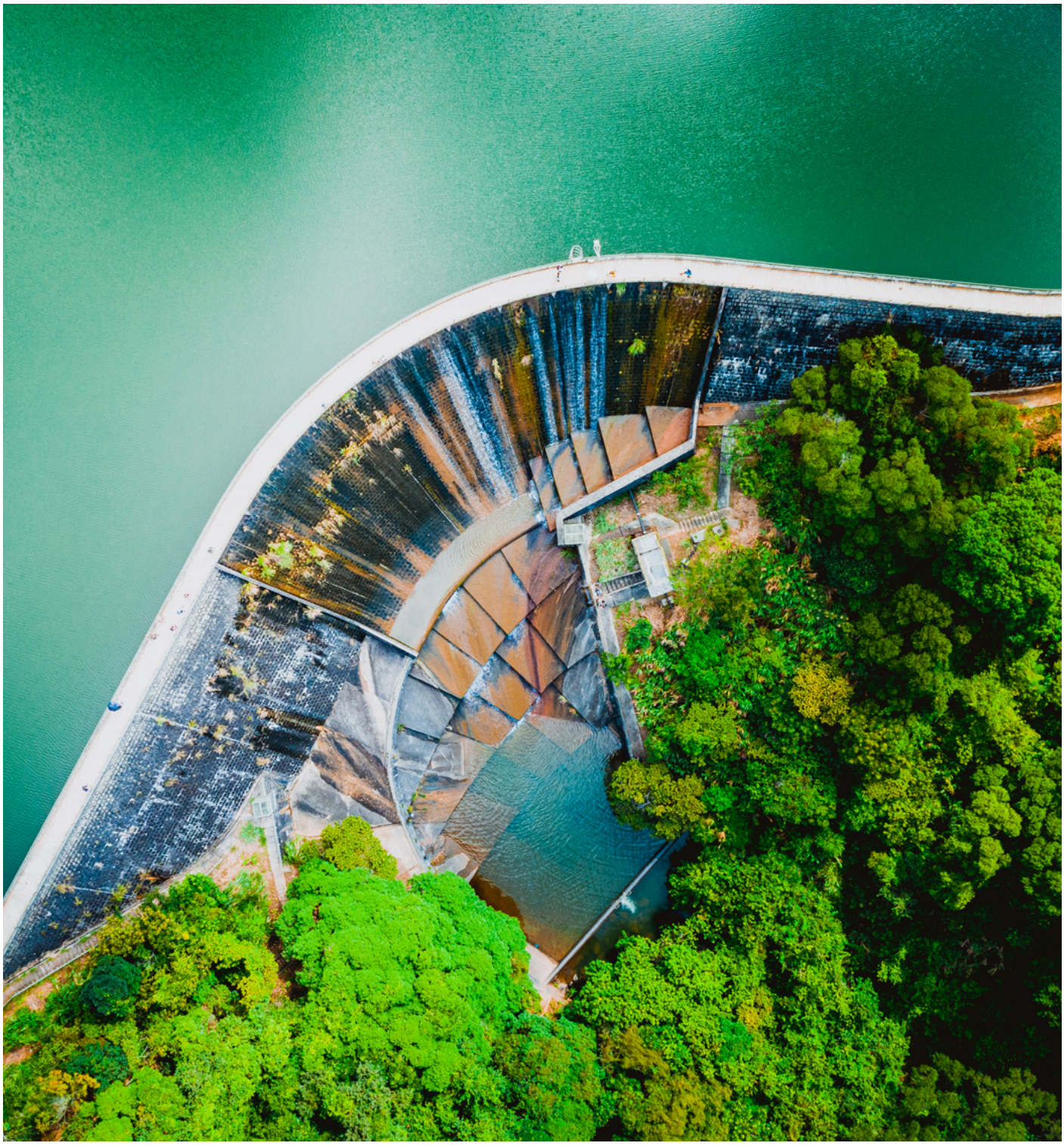
FIGURE 2 **Frequency analysis of nature-related topics in sustainable finance policies of four key economies**



Source: International Institute of Green Finance (IIGF) analysis.

1 The nature policy landscape in China

Zooming in on China's sustainable finance landscape reveals three key observations. In recent years, a rapidly expanding and increasingly systematic policy framework has emerged, designed to equip financial institutions with the tools and incentives needed to identify, evaluate and finance green projects. By strengthening this capacity, China aims to accelerate its transition to a high-quality, low-carbon economy and advance its broader sustainable development goals.



1.1 Systematic framework, climate top concern

China's sustainable finance system is taking shape. In 2021, the People's Bank of China (PBOC) proposed the "three functions" (resource allocation, risk management and market pricing) and "five pillars" (green finance standards system, financial institution supervision and information disclosure, incentive and constraint mechanisms, green finance products and market system, and international cooperation). It has since issued the "Guiding Opinions on Further Strengthening Financial Support for Green and Low-Carbon Development" in 2024, further clarifying the strategic role of the financial system in the green and low-carbon transition.

Additionally, China continues to publish and update the "Green Industry Guidance Catalogue," as well as principles, guidelines and standards in areas such as green credit, green bonds, green insurance and green investment. While these efforts have achieved comprehensive coverage of the five TNFD-defined drivers of nature change (see Figure 3), the emphasis on these topics varies significantly. Notably, climate change is the most frequently mentioned issue in China's policy landscape, accounting for more than 60% of all nature-related keywords in the relevant policies.[8]

1.2 Disclosure policies and standards

China has significantly accelerated policy development for midstream asset management institutions and downstream investee companies. For asset management institutions, PBOC issued the "Guidelines for Environmental Information Disclosure by Financial Institutions" in 2021, encouraging annual disclosures. For downstream investee companies, in 2024, China announced it would develop unified national sustainability standards by 2030, based on ISSB standards.[14]

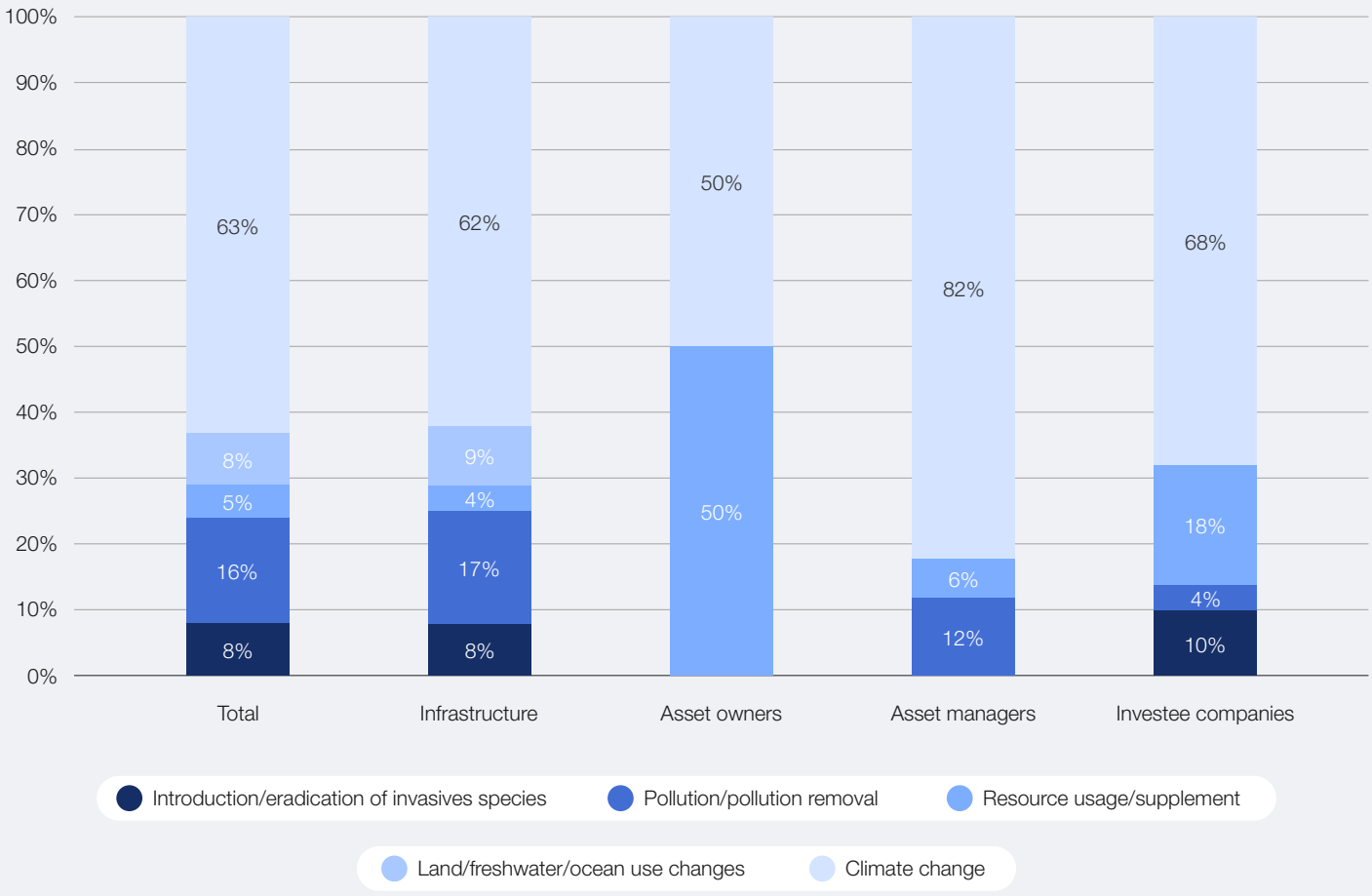
Subsequently, the Shanghai, Shenzhen and Beijing stock exchanges (SSE, SZSE, BSE) simultaneously issued the "Sustainability Report Guidance for Listed Companies" in 2025, marking the first mandate of this nature, which applies to certain listed companies.[15] With IFRS Foundation and TNFD committed to working together on enhancing nature-related financial disclosures for use by capital markets,[16] these developments indicate that China will adopt unified disclosure standards for nature.

1.3 Asset owners: Awareness through policy support

Despite the progress noted above, the policy framework for asset owners (such as insurance and pension funds) consists mainly of guidance, with no mandatory requirements yet.[17] For example, the China Insurance Asset Management Association has issued the "ESG Responsible Investment Initiative for China's Insurance Asset Management Industry" in 2025, which is voluntary.

Overall, China's sustainable finance policy system is advancing in segments, from infrastructure and regulatory requirements to market practices, gradually forming a systematic whole.

FIGURE 3 | **Frequency analysis of nature-related topics in China's sustainable finance policies**



Source: IIGF analysis.

2 Nature in sustainable finance

Sustainable finance plays a pivotal role in driving biodiversity conservation and sustainable development, ultimately contributing to a more resilient and nature-positive future.[9] This chapter covers major publicly traded sustainable finance products, namely bonds and funds, as well as green loans, which are a critical sustainable finance tool in China.

Although the sustainable finance market continues to expand, the allocation for nature-related issues beyond climate change remains minimal, with less than 10% of bonds and funds directed at these. In contrast, over 50% of investments primarily target climate-related themes.

Due to the lack of a unified taxonomy for sustainable finance, discrepancies in data collection lead to inconsistencies, making country-wide comparisons challenging. This issue is prevalent both in sustainable bonds and sustainable funds markets. To help readers understand the global landscape of sustainable finance, particularly China's efforts in this field, this report uses internationally recognized data sources for analysis.

The absence of a consistent taxonomy is particularly problematic for cross-border investments, as investors struggle to compare opportunities on a like-for-like basis, which is crucial for developing a truly global sustainable finance market.[18] This issue has gained attention and efforts are on to address it. In November 2024, the International Platform on Sustainable Finance (IPSF) introduced the Multi-Jurisdiction Common Ground Taxonomy (M-CGT), a comparative framework for the sustainable finance taxonomies of China, the European Union (EU) and Singapore. This initiative aims to simplify the comparison of green taxonomies, facilitating cross-border green loans, green bond issuances and fund investments.[19]

2.1 Sustainable bonds

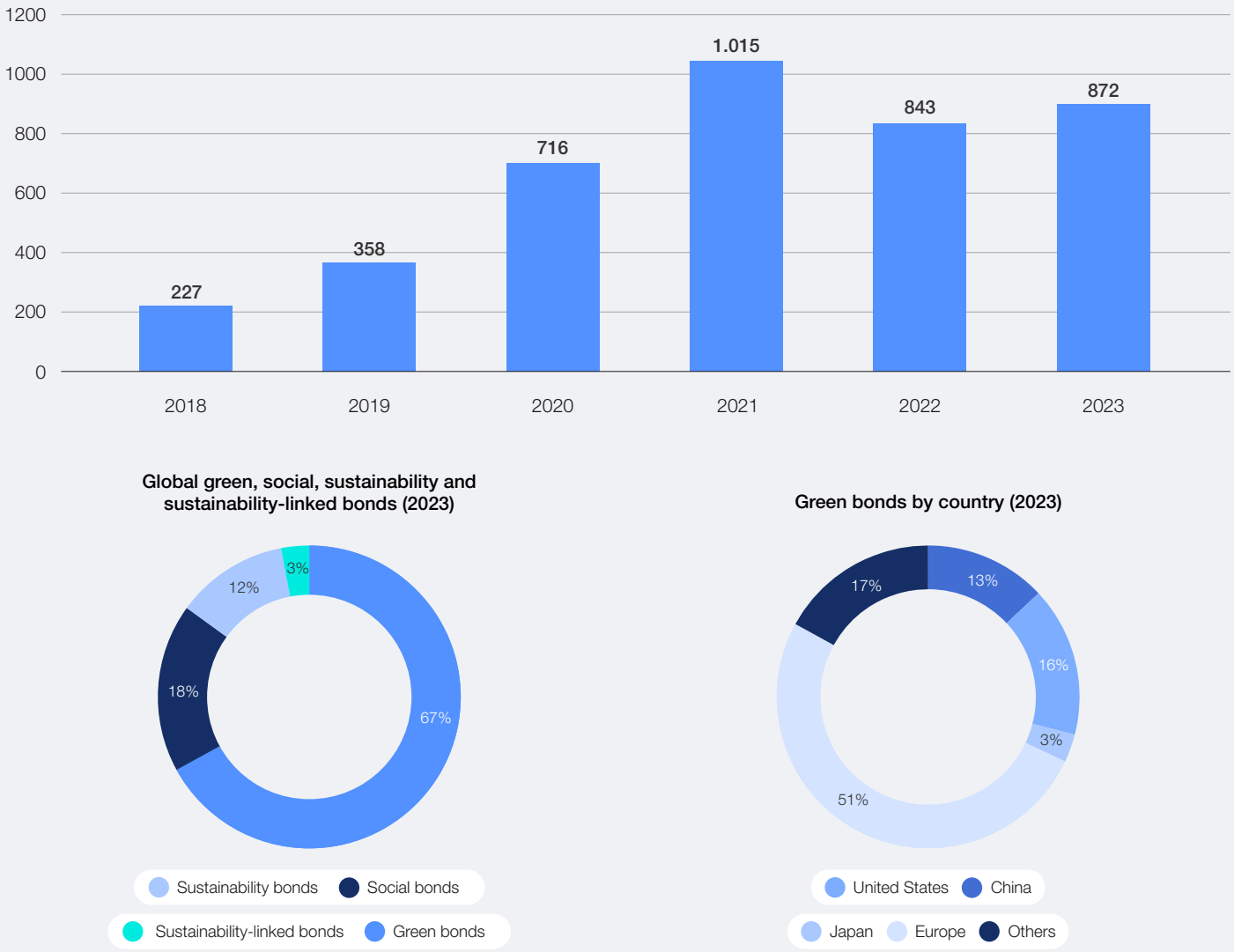
Global market and China's status

By the end of 2023, the cumulative issuance of Climate Bonds Initiative-aligned green, social, sustainability and sustainability-linked bonds (collectively referred to as GSS+) reached $4.4 trillion in value globally. In 2023 alone, issuance aligned with GSS+ totalled $872 billion, a 3% increase from $843 billion in 2022.[20] Green bonds represented the majority, accounting for 67% of the total GSS+ issuance in 2023 (see Figure 4), and are the type of bond most closely associated with nature-related themes due to their clear alignment with environmental and ecological objectives.

Europe remained the largest issuer of GSS+ instruments, contributing $405 billion, which constituted around 46% of the global total. The Asia-Pacific followed as the second-largest region, issuing $189.4 billion in green bonds – approximately one-third of the global GSS+ aligned issuance – with China alone contributing 44% of the Asia-Pacific total. China's prominence in the global sustainable bonds market, particularly among emerging economies, is largely driven by robust domestic policies and international cooperation.[21]

Latin America also saw strong momentum, registering a 49% year-on-year increase, and standing out as the only region where sustainability bonds represent the largest share of GSS+ instruments. While the US experienced a 38% decrease in aligned issuances, influenced by rising anti-ESG sentiment, it remained a significant participant in the sustainable bonds market. Notably, the US was the second-largest issuer of green bonds, representing approximately 16% of global green bond issuances.[22]

FIGURE 4 **Global cumulative green, social, sustainability and sustainability-linked bonds (2018-2023, in $ billion)**

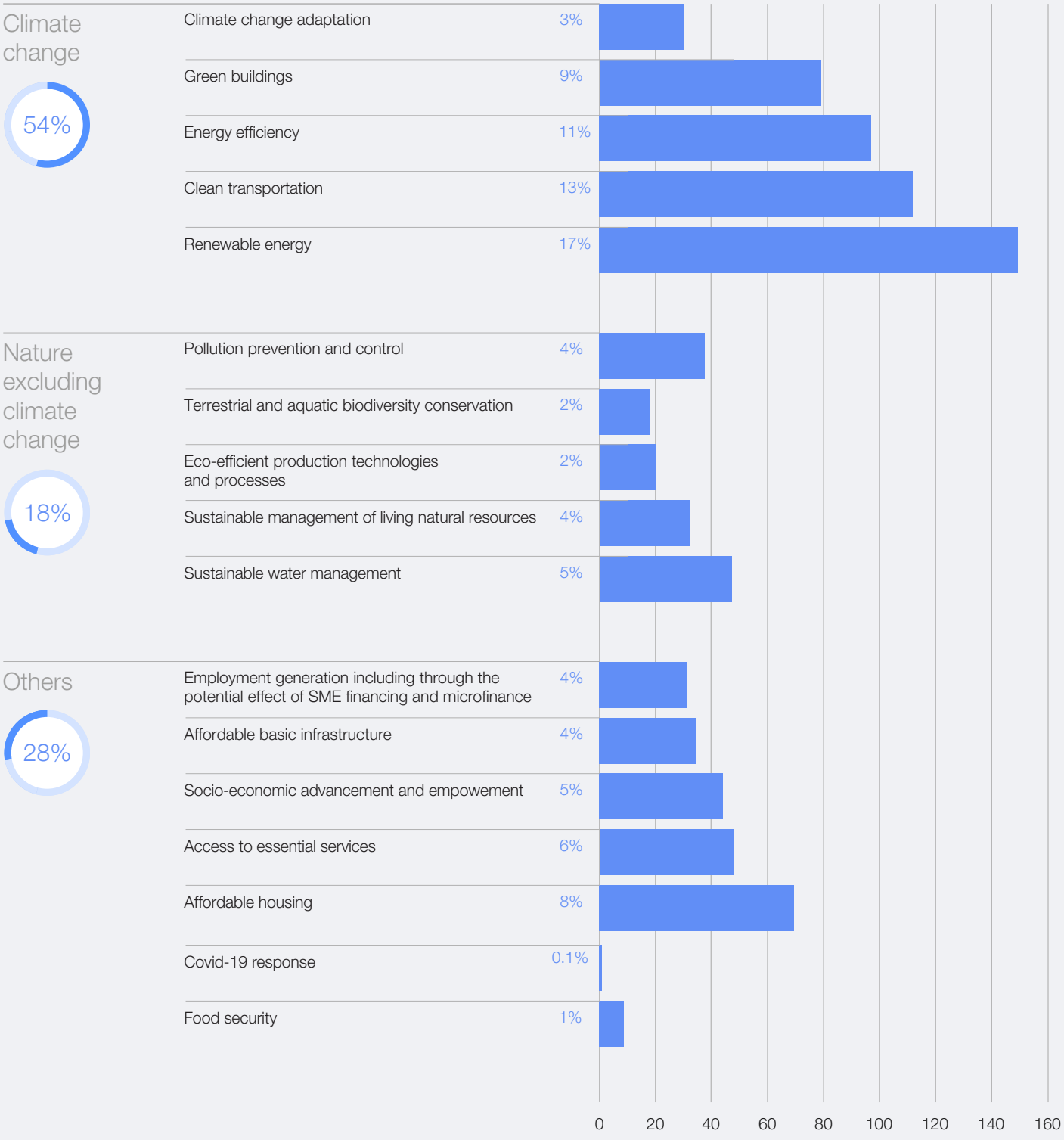


Source: Data integrated from the World Investment Report 2024 and the Climate Bonds Initiative.

Use of proceeds

Energy, buildings and transportation have consistently been the primary categories in the sustainability bond market, primarily targeting carbon emission reduction and accounting collectively for more than 54% of the total, equivalent to $436.2 billion (Figure 5). The proportion of bonds linked to nature-related themes, such as water management, pollution control, resource conservation and biodiversity conservation, remains modest, collectively accounting for approximately 18% of total sustainable bond issuance.[23]

FIGURE 5 **Use of proceeds of sustainability bonds issued in 2023 by value ($ billion)**



Notes on methodology: The value of bonds with multiple uses of proceeds was pro-rated to each use.
Source: Environmental Finance.[24]

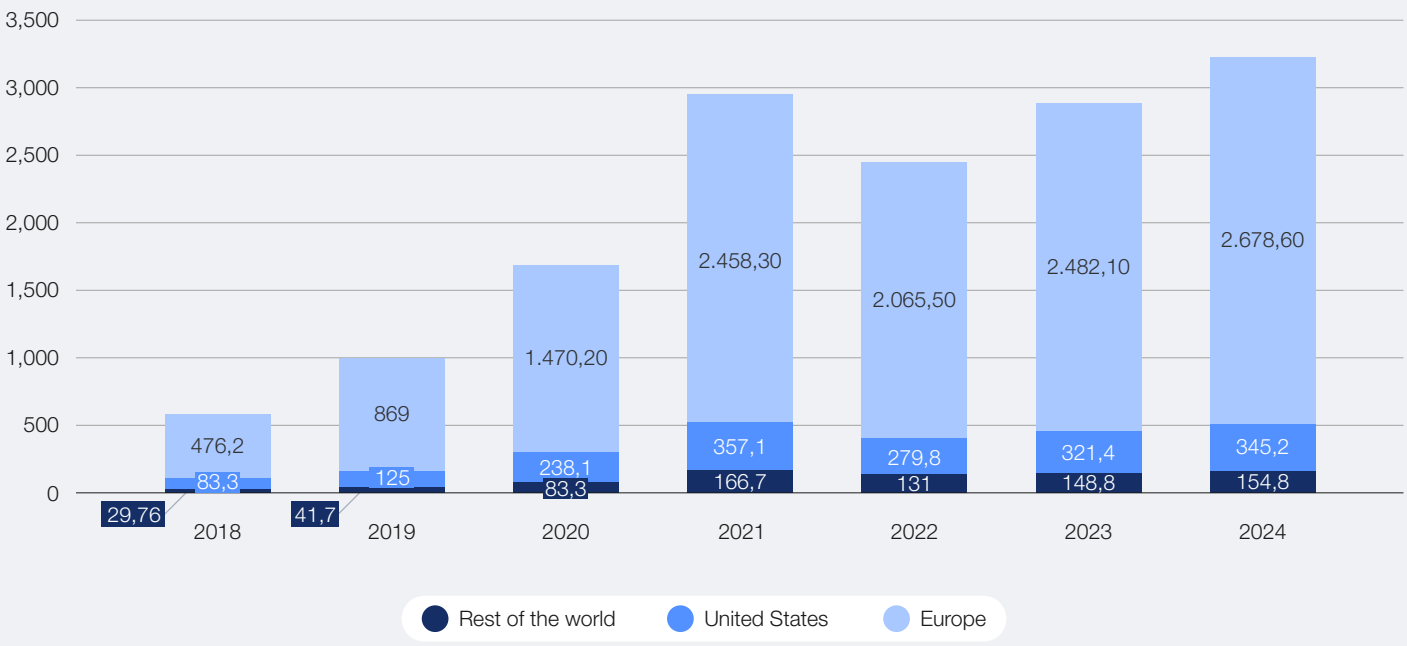
2.2 Sustainable funds

Global market and China's status

The sustainable funds market continued to expand in 2024, albeit at a slower pace. The total assets with sustainable funds reached $3.2 trillion by the end of 2024 (Figure 6). These funds remain highly concentrated in Europe and the US, representing 84% and 11% of the global market, respectively. The market share of US sustainable funds declined to 11% by 2024 from 15% in previous years, whereas the share of the rest of the world rose from a minimal 0.7% in 2018 to 3%.[25]

Although the increasing number and value of sustainable funds indicate continued growth, sustainable funds face a challenging environment. High interest rates, lagging performance, lukewarm demand and rising concerns about greenwashing have all contributed to growing uncertainties in the market. As a result, the number of new launches has continued to decline.[26]

FIGURE 6 **Annual global sustainable fund assets ($ billion)**

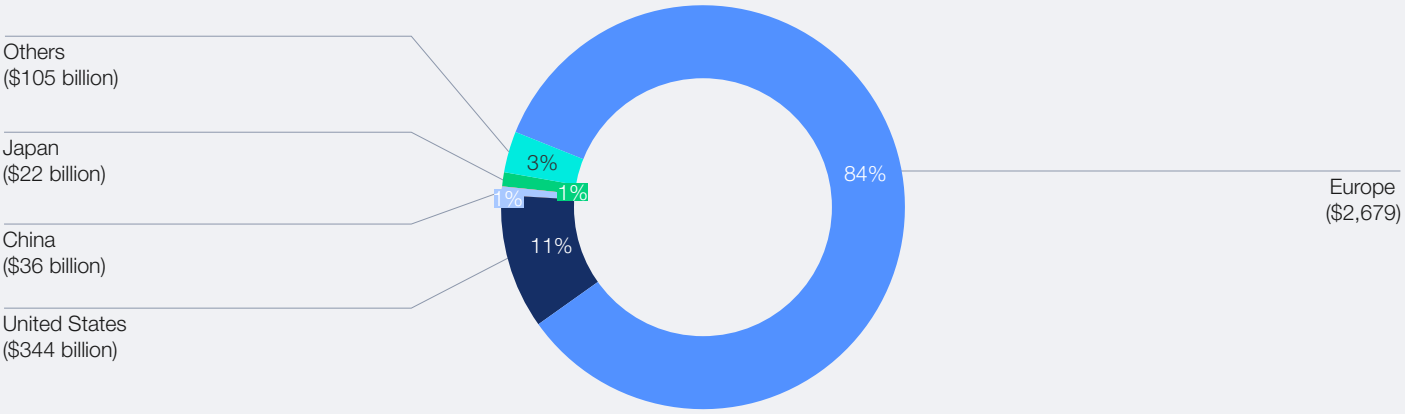


Source: Morningstar Direct. Data as of December 2024.

Compared to the green bonds market, China's ESG funds market is still in the early stages of development. As of 2024, the total assets under management in China's ESG funds amounted to 1% of the global market (Figure 7). The market still lags significantly behind that of the US (11%) and Europe (84%).

In terms of trends, China's share of the ESG funds market in Asia (excluding Japan) has decreased from around 50% in 2022 to about 35% in 2024. Overall, China still dominates the region in terms of the scale of its ESG funds, despite the rapid growth of other markets such as Thailand and Singapore. This indicates significant growth potential for China's ESG fund market.[27]

FIGURE 7 | **Assets under management of sustainable funds (2024)**

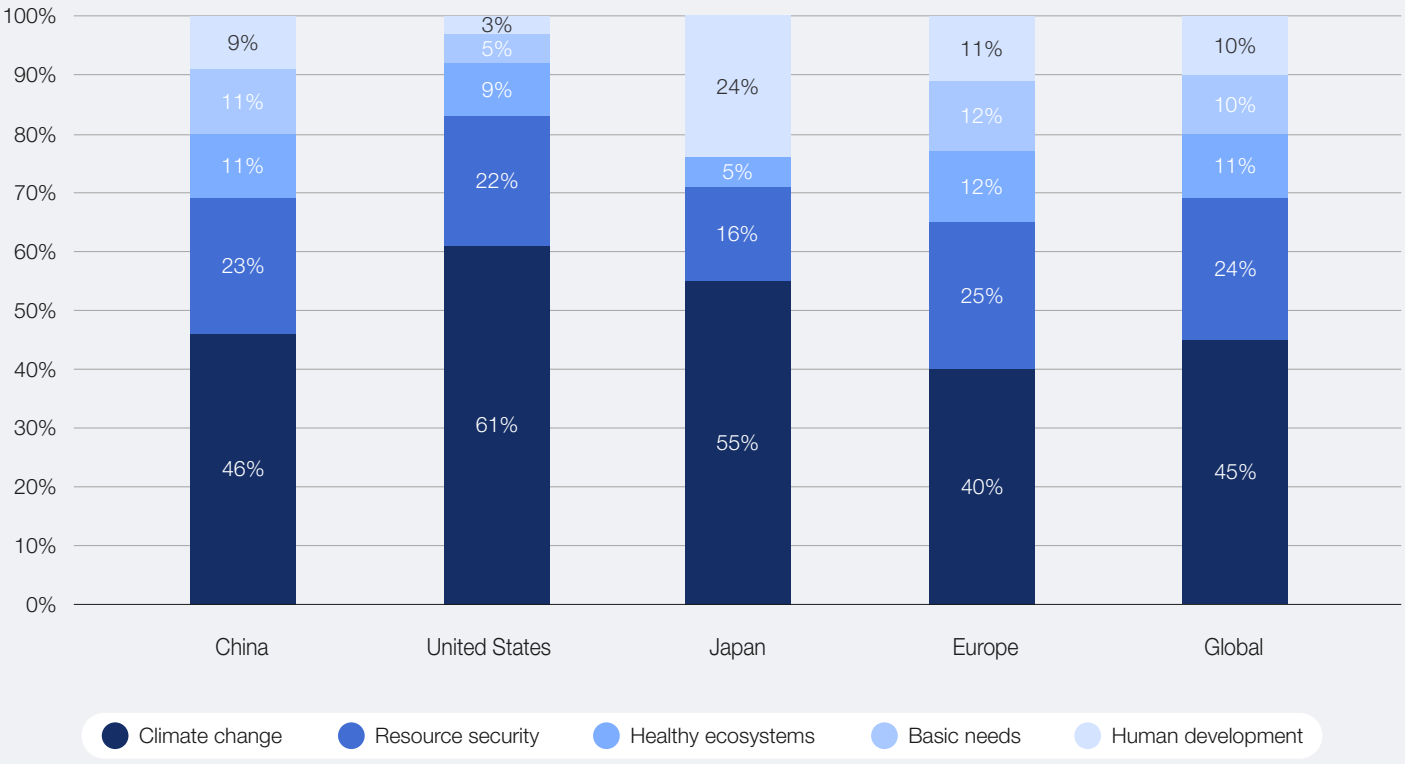


Source: Morningstar Direct. Data as of December 2024.

Use of proceeds

The allocation of funds in various countries aligns closely with their policy orientations. The field of climate change has become the most prominent nature-related topic, accounting for approximately 45% of the total scale of funds globally. Among these, US funds showed the most significant inclination towards climate change investments – 60%, which aligned closely with US policy directions as of 2024.[28] In contrast, Europe's investment landscape is more diversified, with broader allocations not only in climate change but also in biodiversity, resource utilization and other nature-related topics.[29]

FIGURE 8 | **Proportion of sustainability funds, globally (2023)**



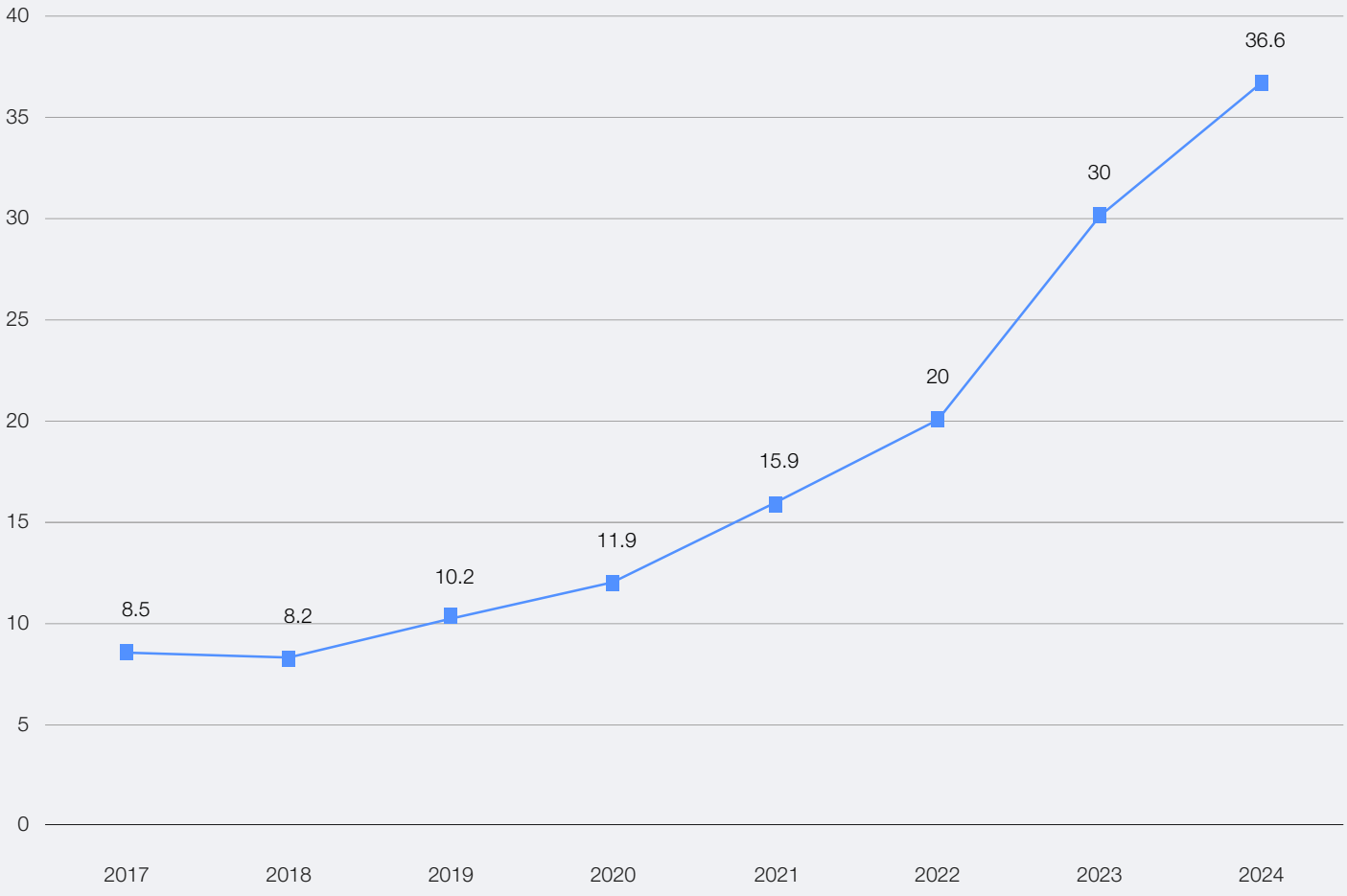
Notes: Categorization refers to Morningstar Sustainable Attributes framework and definitions for its Sustainable Investment and Employs Exclusions attributes.
Source: Morningstar, CICC ESG Fund Research.

2.3 Green loans

While green bonds have attracted significant global attention as a key instrument for financing sustainable projects – and China's green bonds market has already demonstrated strong performance on the global stage – **green loans play a more dominant role in China's green finance landscape.**[30] The development model is characterized by China's bank-led approach, guided by policy, which continues to help mobilize capital towards the national sustainable development goals.[31]

By the end of 2024, China's green loan balance had reached RMB 36.6 trillion ($5.14 trillion), accounting for 14.31% of total loans, with an impressive 21.7% year-on-year growth (see Figure 9). In terms of sectoral distribution, green loans in China are heavily concentrated in **climate and energy-related sectors**, together accounting for **83.6%** of the total green loan balance. This includes: **RMB 15.68 trillion** in green infrastructure upgrades, **RMB 9.89 trillion** in clean energy projects and **RMB 5.04 trillion** in energy conservation and environmental protection. In contrast, financing for other nature-related activities, such as biodiversity conservation and ecosystem restoration, remained modest.[32]

FIGURE 9 **Green loans in China (RMB trillion)**



Source: Based on People's Bank of China public report.

3 Challenges and explorative pathways

This chapter is based on interviews and workshops with 17 leading Chinese financial institutions – including banks, funds, insurers and securities firms – which have imparted a deeper understanding of the state of nature finance in China.

While financial institutions in China are increasingly recognizing the importance of nature and biodiversity-related issues, practical application remains nascent. Many institutions acknowledge the growing relevance of incorporating nature-related considerations but struggle with identifying the right entry points and integrating these factors effectively into their decision-making frameworks.

Based on the responses and insights gathered, three major challenges are evident, which are aligned with the challenges observed in the global market.[33]

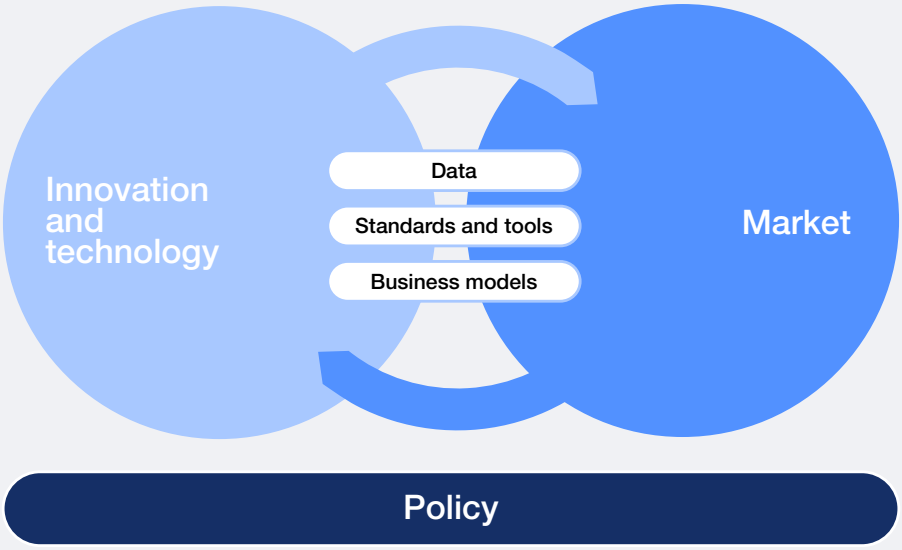
Challenges	Key issues
Data bottleneck	– **Lack of foundational nature-related data** (due to fragmented sources and inadequate data-sharing mechanisms). – **Insufficient performance metrics** (because of a lack of widely accepted methodologies to measure and disclose environmental and biodiversity outcomes).
Difficulty in evaluation and pricing	– **Lack of assessment methodologies and tools applicable in China** (and limited standardized approaches for evaluating biodiversity and nature-positive impacts).
Unclear business models	– **Positive externalities undervalued by markets** (since nature projects offer social benefits but can have low financial returns and long payback periods). – **Lack of viable business models and innovative financing instruments** (hence a difficulty in converting environmental and social benefits into sustainable financial returns).

Despite the challenges identified, financial institutions should adopt an iterative mindset and start integrating nature-related considerations into their decision-making by piloting innovative solutions, exploring new investment models, and deepening collaboration with clients and investee companies to support the transition towards a nature-positive future.

3.1 Explorative pathways for a systemic shift

Drawing on the experiences shared and innovations observed, four strategic approaches can address the key challenges hindering the growth of nature finance in China: strengthening policy frameworks, leveraging emerging technologies, innovating methodologies and tools, and designing innovative business models.

FIGURE 10 **Adopting an iterative mindset for mobilizing private finance for nature**



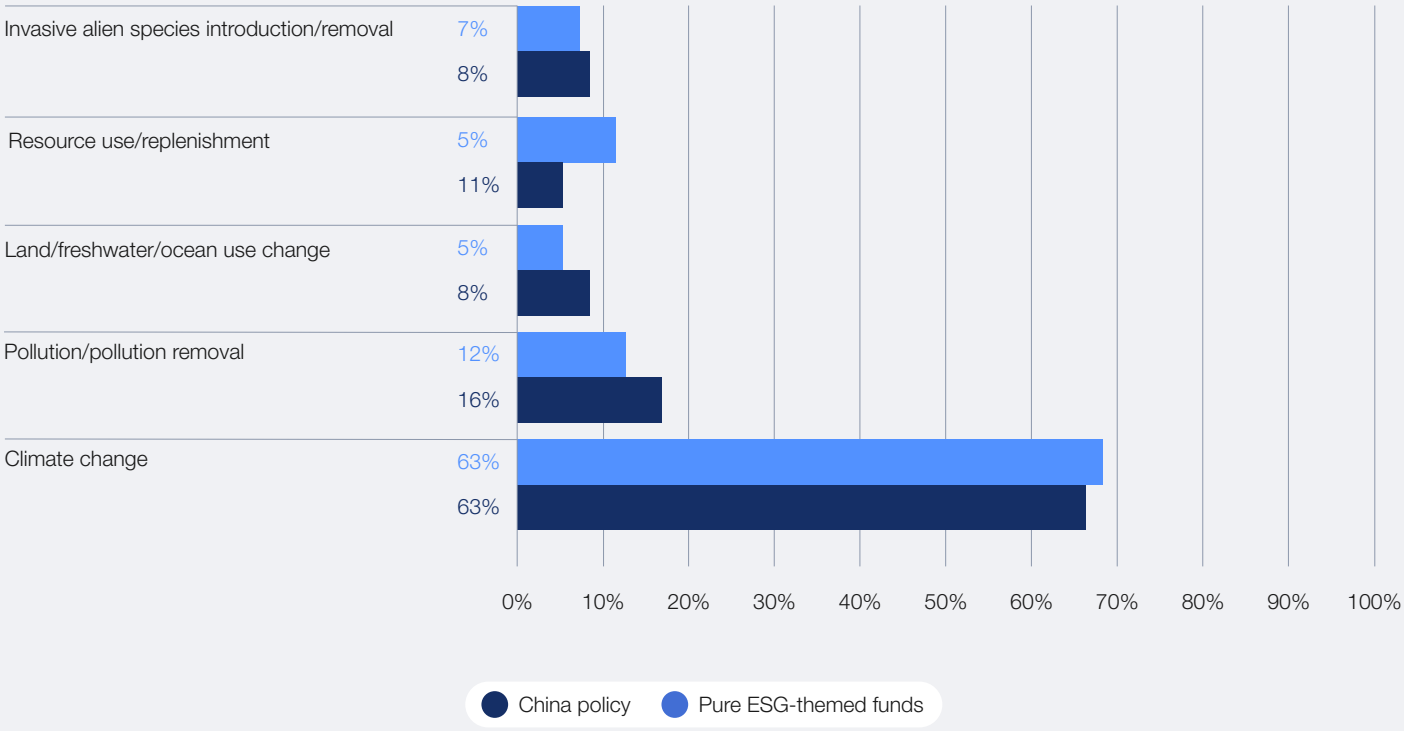
1 Strengthening policy throughout the sustainable finance ecosystem to drive private finance

Global experience in tackling climate change highlights the central role that policy plays in driving sustainable finance. A well-defined and supportive policy environment is fundamental to driving private-sector participation in nature finance. Nature-positive projects, such as biodiversity conservation and ecological restoration initiatives, often have the characteristics of public goods, including low returns and long timelines, making them difficult to finance without strong policy support. Government-led policies are crucial in shaping market incentives and risk management mechanisms.[34] Strong policy frameworks encourage the development of standardized disclosure practices and the establishment of consistent, comparable biodiversity-related reporting frameworks. This, in turn, helps address all three key challenges.

Analysis of the investment direction of China's ESG funds and its national policies on sustainable finance reveals that policy has had a significant influence on nature-related issues, with climate change policy support far surpassing that for other nature-related topics. The market has reflected this disparity (see Figure 11). Therefore, a more robust policy framework is critical in driving private sector engagement in nature-positive projects, which often have strong public benefits, low returns and relatively high risks.[35]

Policy should be further enhanced in terms of categorization, nature-related metrics systems and disclosure requirements, drawing from the experience with climate-related policies and starting with measurable metrics. Furthermore, it should establish mechanisms for rewards, penalties, taxes, incentives and markets for nature-related credits. As indicated in Appendix A, a critical opportunity for China is to establish comprehensive sustainability guidance, covering nature-related factors for significant asset owners, such as pension funds.

FIGURE 11 | **Nature-related keyword frequency distribution in China's sustainable finance**



Source: IIGF analysis.

2 **Leveraging emerging technologies to overcome data limitations**

Emerging technologies, such as satellite remote sensing, AI, internet of things (IoT)-based data collection systems and blockchain, are poised to play a transformative role in addressing data-related bottlenecks in nature finance. These technologies provide accurate, real-time and scalable data, enhancing the quality and credibility of information used for risk assessment. AI, in particular, significantly reduces the cost of data collection and processing, making high-quality biodiversity data more affordable. By enriching available data and ensuring transparency, these technologies help to provide nature-related qualitative reference, paving the way for more informed and effective investment decisions.

Data integration and technological innovation: Filling data gaps and breaking down data silos

The Institute of Public and Environmental Affairs (IPE) in China has been working to integrate fragmented environmental data – such as on ecological protection zones, biodiversity reserves, water and soil conditions, pollutant emissions, land use and related regulations – into a unified platform.[36]

Using spatial data integration technologies and AI, IPE presents a visualized dataset that enables financial institutions to understand the natural environment around a project. This empowers them to assess both physical and transition risks associated with nature. IPE's ecosystem data and risk models are now integrated with financial institutions such as the Postal Savings Bank of China[37] and WeBank.[38]

3 **Innovating methodologies and tools for pricing and evaluation**

The lack of established analytical models, methodologies and tools for assessing the environmental impacts of corporate behaviour remains a significant barrier to the advancement of nature finance. Financial institutions often struggle to accurately price nature-related risks and assess long-term biodiversity outcomes.

In addition to addressing these challenges through improved data and supportive policies, a complementary approach involves using **longitudinal analysis of corporate business performance and industry benchmarking** – both of which can be derived from publicly available corporate reports. By tracking performance over time and comparing it with industry peers, financial institutions can develop a preliminary understanding of a company's nature-related risks and identify potential entry points for nature finance. This approach can help address **the challenge in pricing and evaluation** by providing a more practical and accessible framework for assessing biodiversity-related impacts.

Developing nature-related risk assessment based on corporate disclosures

E Fund Management (E Fund), in collaboration with the International Institute of Green Finance (IIGF) at the Central University of Finance and Economics, has developed an innovative biodiversity risk assessment methodology. Based on the ENCORE tool, this methodology categorizes and evaluates both environmental impacts and dependencies of corporate activities on areas such as air quality, habitats, landforms and minerals. AI is then applied to automatically identify and assess relevant data from publicly available corporate disclosures, such as corporate annual reports. The same methodology is used to assess how companies manage their biodiversity risks.

Using the IIGF Biodiversity Risk Exposure Database for Chinese-listed Companies,[39] E Fund analyses its fund holdings, compares them with similar products, and assesses their exposure to biodiversity risks. If a fund shows significant risk, a transparency mechanism triggers a more detailed analysis of its core holdings.

While the biodiversity risk assessment methodology has room for improvement, it has already enabled E Fund to conduct preliminary biodiversity risk screening on a vast portfolio of assets, making active engagement in biodiversity-related projects possible.[40]

4 **Exploring and scaling innovative business models to address commercial viability challenges**

Nature finance faces four inherent challenges associated with ecosystem-related projects: **quantification, transaction, collateralization and monetization.**[41] To overcome these hurdles, several innovative business models have been observed in China:

A. **Blended public-private capital with risk sharing:** Combining low-return, high public-good biodiversity projects with high-return, commercially viable nature-based projects can optimize risk-sharing and ensure that financial returns are aligned with the distribution of benefits.

Sustainable water governance through the EOD model in Tianjin-Jizhou canal[42]

The Chinese Ministry of Ecology and Environment's "Ecological Optimization and Development" (EOD) model, launched in 2018, brings together government, enterprises and financial institutions to create sustainable, nature-positive projects.[43] This model enables the internalization of ecological benefits by making ecological projects profitable.

The project of comprehensive water system governance of the Tianjin-Ji Canal, with an RMB 6.5 billion investment and a 20-year timeline, is a prime example of the EOD model. The project focuses on water management, ecological restoration and environmental improvement (see Figure 12).

Funding structure

30% equity: Contributed by social capital based on equity ratios, involving both state-owned and private enterprises.

70% financing: Primarily from policy banks (China Development Bank, Agricultural Development Bank) via medium- and long-term loans.

In addition to the RMB 6.5 billion investment, the EOD project is pursuing additional funding sources, including long-term insurance capital and government support, to further leverage equity capital.

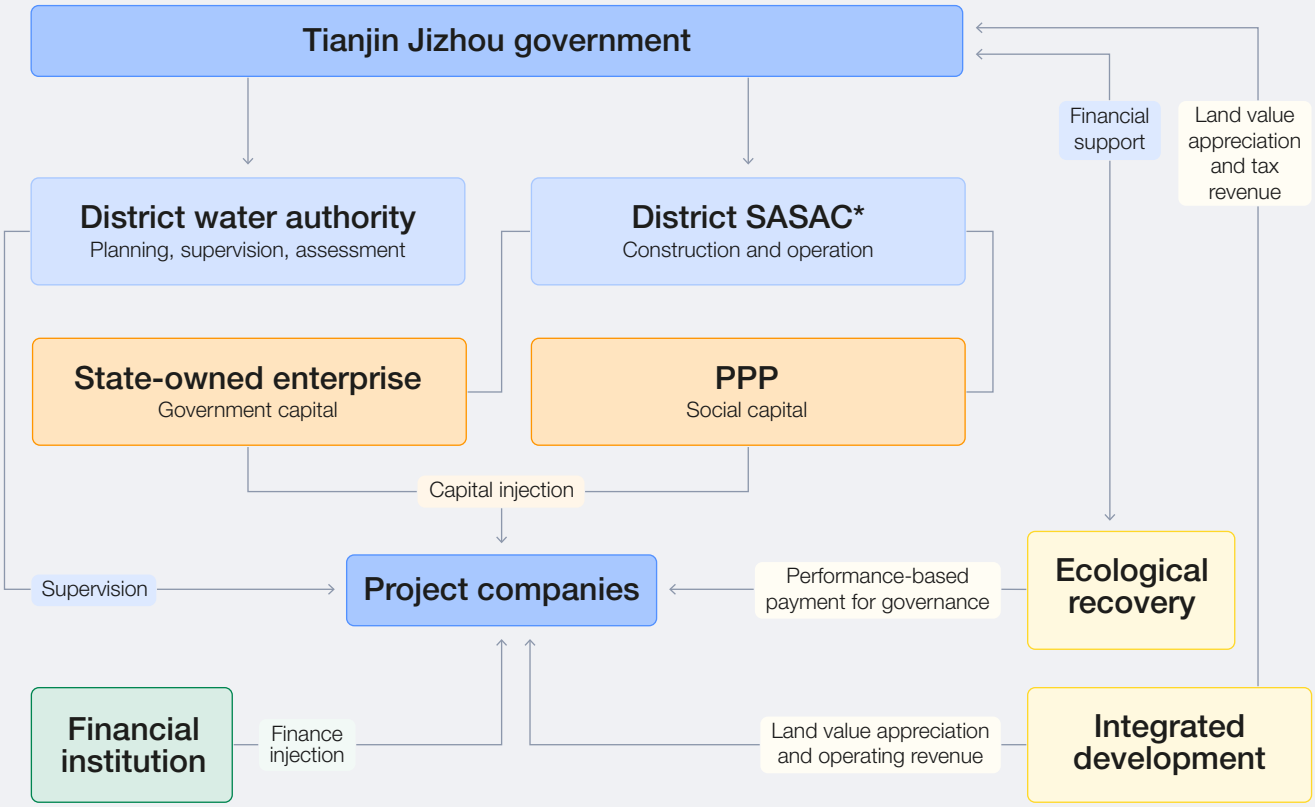
Revenue model

Government payouts: Stable revenue from government purchasing water governance and maintenance services.

User payments: Income generated from integrating industries like tourism, wellness and agriculture into the project.

Additional revenues: Income from sharing of land value appreciation post-ecological restoration and supplementary funding from specialized governance and ecological service payouts.

Figure 12: Financing structure of the Tianjin-Ji canal ecological restoration project



*State-owned Assets Supervision and Administration Commission of the State Council.

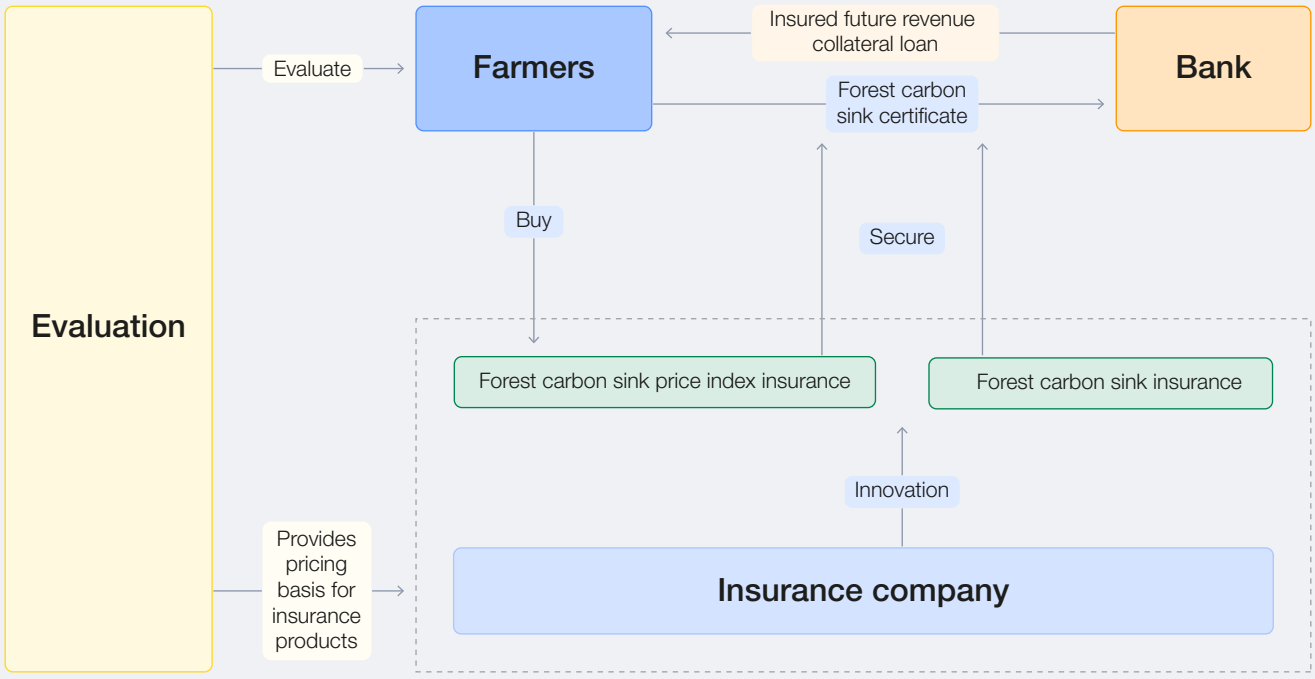
B. **Establishing diversified risk transfer and compensation mechanisms:** Innovative insurance models, including risk transfer, loss compensation and disaster prevention, can help close the financing loop by mitigating risks and ensuring project sustainability.

Unlocking funding pathways through insurance mechanisms in Lishui [44]

Lishui city offers a promising solution for making nature-related projects profitable, by integrating innovative insurance mechanisms. Farmers use future revenue certificates from forestry-related carbon sinks as collateral for loans. The loans are supported by "Forest Carbon Sink Insurance" and "Forest Carbon Sink Price Index Insurance". The involvement of insurance lowers loan interest rates by 10 to 50 basis points compared to conventional loans,[45] while also increasing the loan amounts available to farmers.

This model effectively transforms the environmental value of carbon reduction into a financial asset, opening funding pathways for more nature conservation and restoration projects. The cooperative mechanism between banks and insurance companies helps transfer risks, provide compensation and mitigate potential losses, making it easier for private institutions to engage.

Figure 13: Insurance-driven financing flow in Lishui's forest carbon sink projects



C. **Expanding collateral options to improve credit mechanisms:** Introducing new forms of collateral based on natural assets or ecosystem services can significantly enhance the creditworthiness of biodiversity-related projects, thereby facilitating greater access to finance for nature-positive initiatives, particularly for small and medium-sized enterprises (SMEs).

A key example of successful collateralization in the sustainable finance space is carbon credits, which have a well-established system that includes clear metrics, verification, certification and trading. These systems enable carbon credits to be used as collateral in financing transactions, creating a reliable and scalable asset for financial institutions.

Similarly, biodiversity credits, or ecosystem service-related credits could be developed by adopting a comparable framework, which would mobilize financial institutions to assess and incorporate nature-related risks and opportunities into their lending decisions. This approach would unlock a wider range of collateral options for projects favouring nature-positive outcomes, attracting more diverse financial support and driving increased investment for nature.

State grid's innovative green financing for SMEs using nature-based collateral

The State Grid Shanghai Municipal Electric Power Company (SMEPC) has developed a model to help SMEs in its supply chain to access green financing by leveraging environmental performance data (Figure 14):[46]

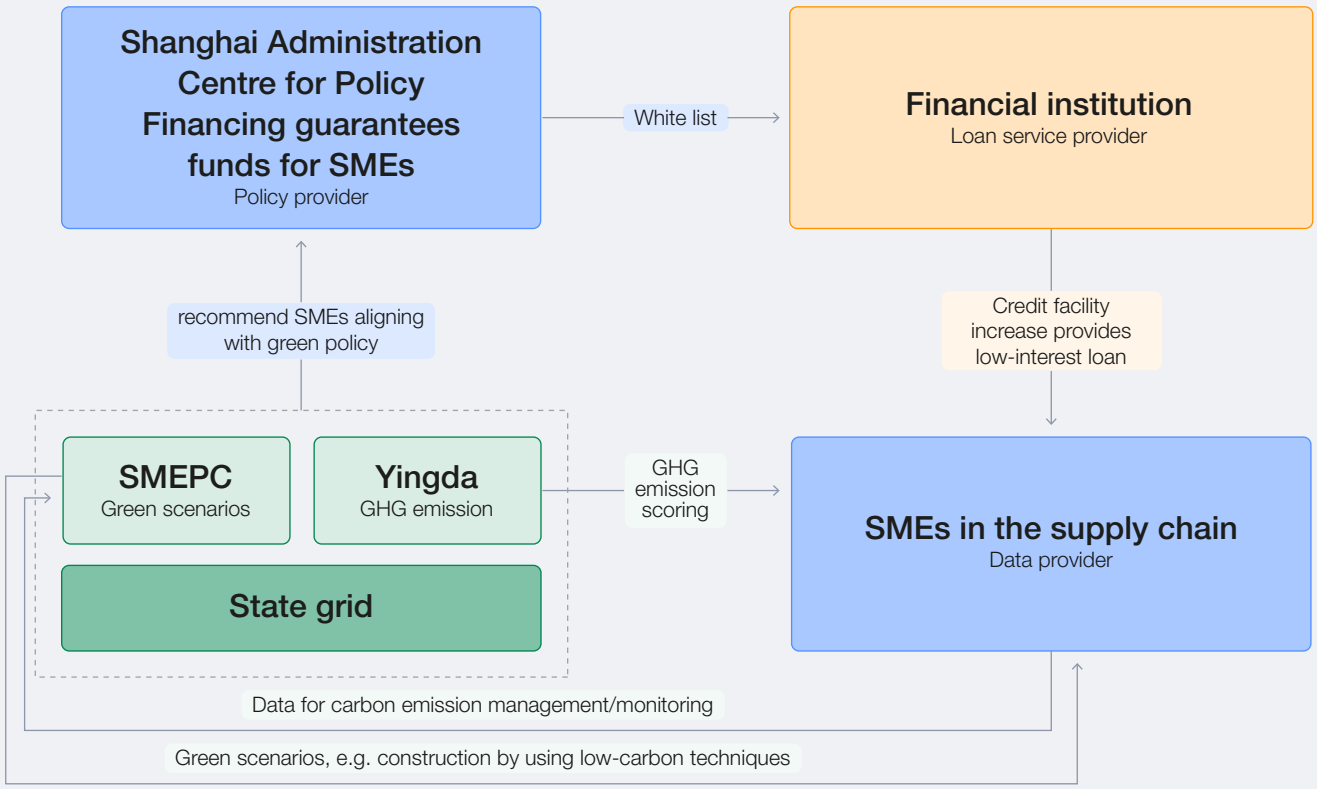
1. Credit facility enhancement by verified GHG emission scoring granted by the state grid: As the supply chain leader, SMEPC provides nature-related data of an SME, while ratings provider Yingda provides a GHG emission score. This environmental performance evaluation is considered an intangible asset to increase the amount of credit an SME can access.
2. Policy guarantee backstop: Policy-backed guarantees replace physical collateral for carbon-compliant SMEs, enabling access to green financing.
3. Product linkage collaboration: Partnering with six banks to establish a green fast-track approval channel, the initiative integrates carbon evaluation, guarantee eligibility and credit products into an online platform, which enables parallel processing of evaluation, credit granting and loan disbursement.

Since June 2024, the "Electric-carbon Low-interest Loan" programme has:

1. Provided financing guarantees to **373 SMEs.**
2. Facilitated **60+ new financing matchings** through precision pairing.
3. Unlocked **RMB 150 million** in total credit lines.
4. Reduced average lending rates by **over 0.5%**.[47]

This approach does not only facilitate the green transition of SMEs but also introduces a valuable method for creating new collateral and managing biodiversity risks in supply chains.

Figure 14: Green financing model for SMEs in state grid's supply chain



These innovative approaches help address **the challenge of lack of viable business models** by creating a more conducive environment for nature finance and increasing the scalability of biodiversity-related investments.

Conclusion

The potential for nature finance is immense, especially in emerging markets like China. As the policy frameworks strengthen, technological advancements accelerate and financial products diversify, financial institutions are uniquely positioned to catalyse transformative change for biodiversity conservation and nature-positive transitions.

By spearheading financial innovation and developing robust risk management and return assurance mechanisms, the private sector can unlock unprecedented levels of investment in nature-positive initiatives. This surge in private capital is essential to bridging the biodiversity financing gap and advancing progress towards global biodiversity targets, ultimately fostering a more resilient and sustainable future for all.

Appendix A

Analysis of coverage of sustainable finance policies and nature-related issues in China, Europe, Japan and the US

Dimension country/region		China	Europe	Japan	USA
Sustainable finance infrastructure		Well-developed framework including planning, taxonomies and standards; the five main nature-related topics are covered; focus is mainly on climate, resources and pollution.	Well-developed framework including planning, taxonomies and standards; five main nature topics covered; climate change prioritized but strong emphasis on resource use and invasive species management.	Relatively developed framework including planning and standards; main focus on climate.	Relatively developed framework including planning; main focus on climate.
		✓	✓	✓	✓
Finance ecosystem	**Asset owners**	Lack of unified regulations for asset owners in ESG, while some initiatives are developed.	ESG integration (particularly climate issues) explicitly mandated in insurance and pension funds' investment guidelines.	Required to consider ESG and long-term value in pension funds.	ESG is partially required in state-level pension funds instead of federal-level; focus on climate change.
		✓	✓	✓	✓
	Asset managers	Environmental disclosures required; environmental stress test pilots encouraged; focus on climate, resource efficiency, pollution.	Sustainability disclosures mandated; climate and environmental stress tests widespread; climate, resource use, biodiversity covered.	ESG integrated in fiduciary duties; no detailed nature requirements.	ESG fiduciary duties emphasized; anti-greenwashing disclosures required.
		✓	✓	✓	✓
	Investee companies	ESG disclosure mandated for some listed companies, following ISSB framework; all five main nature topics covered.	ESG disclosure mandated for companies above a designated size; five main nature topics covered.	Mandatory ESG disclosure for some listed companies following ISSB framework; main focus on climate topics; partial focus on ecological topics.	Climate disclosure voluntary.
		✓	✓	✓	✓

* **Methodology:** The methodology for this analysis draws primarily on the framework used by the International Institute of Green Finance (IIGF)[48] and incorporates the policy analysis approach outlined in the World Bank's report "Mobilizing Private Finance for Nature".
Source: IIGF analysis.

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Endnotes

Please note some websites cannot be accessed from outside China due to internet restrictions.

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