BRI International Green Development Coalition
2020 Policy Study Series

Green Development Guidance for BRI Projects Baseline Study Report

December 2020

In April 2019, Chinese and international partners officially launched the BRI International Green Development Coalition (BRIGC) at the Second Belt and Road Forums for International Cooperation. BRIGC aims to establish a policy dialogue and communication platform, an environmental knowledge and information platform, and a green technology exchange and transfer platform, so as to advance global consensus, understanding, cooperation, and action of a green Belt and Road Initiative (BRI).

BRIGC officially launched the Joint Research on Green Development Guidance for BRI Projects (Guidance Project) in December 2019, with the purposes of exploring the formulation of guidelines on the assessment and classification of BRI projects from the perspective of preventing ecological and environmental risks, establishing risk prevention and management systems, providing green solutions for BRI projects, and supporting decision-making for stakeholders.

This report is the Baseline Study (Phase I of the Guidance Project). Through in-depth analysis of environmental policies, safeguard measures and practices of governments, financial institutions and NGOs around the world, this report summarizes best practices for recognizing and addressing ecological, environmental & climate risks in overseas investment, formulates a classification framework and positive & negative lists for BRI investments, and puts forward specific suggestions to promote green development for BRI projects.

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EXECUTIVE SUMMARY

Green is the Color of the "Belt and Road Initiative"

Since the outbreak of COVID-19, the global economic development has been severely affected. Most countries' economies are experiencing negative economic growth, resulting in serious economic difficulties for societies. Against the shock of the epidemic, countries have realized that the world is one community with one shared future for mankind, and that policies and practice based on interconnections, openness, and inclusiveness are the only way to cope with a global crisis and to achieve long-term development. With green recovery a core concern of global economic recovery policy, the international community expects the Belt and Road Initiative (BRI) to play an important role in contributing to a global green recovery. A green BRI will provide a platform for all countries to share in a resilient, inclusive, and sustainable development mechanism, and to implement the UN 2030 Agenda for Sustainable Development.

Making "green" the color of BRI is again underlined in China's newly formulated 14th Five-Year Plan for National Economic and Social Development and the 2035 Vision of the 5th Plenary Session of the 19th Central Committee of the Communist Party of China (CPC) in October 2020. China and BRI participating countries have actively carried out bilateral and regional cooperation already since 2013 for ecological and environmental governance, biodiversity conservation, and climate change response, continually consolidating and deepening Green BRI implementation, and jointly promoting implementation of the UN 2030 Agenda for Sustainable Development, which has achieved positive results.

Accelerating BRI green development raises parallel requirements of promoting green infrastructure and of strengthening the quality and assurance of ecological environments. The construction of BRI includes many infrastructure projects, which bear various environmental and climate risks. On the one hand, the environmental and climatic conditions of BRI participating countries are varied and are often of a high level of environmental and climatic sensitivity. Most of Southeast Asia, South Asia, West Asia, North Africa, and neighboring regions comprise developing nations with a great demand for large-scale energy, minerals, industry, and infrastructure projects, leading to rapidly rising resource consumption and pollutant emissions. On the other hand, risk identification and prevention mechanisms of overseas investment must be improved; the application and promotion of green investment and financing tools are insufficient; and eco-environmental risk management of many overseas investment projects needs enhancement.

Strengthening risk prevention and management is an important part of Green BRI and a part of consolidating and deepening BRI development. Since 2013, the Chinese government has issued a series of policy documents to strengthen eco-environmental risk prevention and management of BRI: the *Guiding Opinions on Promoting the Construction of Green BRI* was based on "preventing eco-environmental risks and ensuring eco-environmental safety," to "promote the formulation and implementation of policies and measures to prevent eco-environmental risks of investment and financing projects, and strengthen the environmental management of foreign investment"; the BRI Eco-environmental Protection Cooperation Plan proposed to "guide green investment decision-making and strengthen environmental risk management in BRI and other foreign investment projects." Most recently in November 2020, the Ministry of Ecology and Environment (MEE) together with four other ministries/regulators jointly issued the "Guidance on Promoting Investment and Financing to Address Climate Change," which promotes the active integration of climate investment and financing into the BRI and aims to "encourage financial institutions to support the low-carbon development in BRI and South-South Cooperation, and advance the launch of overseas climate mitigation and adaptation projects."

It is necessary to formulate a set of clear and practical green development guidelines for BRI projects. To accelerate construction of Green BRI and fully implement the UN 2030 Agenda for Sustainable Development, especially by creating investment and cooperation opportunities to promote post-COVID social and economic development, a set of clear and operable guidelines for the green development of BRI projects is needed to help stakeholders join forces in accelerating the green, low-carbon, and sustainable investment. This report analyzed the best practices from governments, financial institutions, and non-governmental organizations (NGOs) on their environmental policies, safeguard measures, and actions greening the investment. Based on the best practices, the report developed a project classification system that forms the positive and negative lists, and proposed recommendations to guide the green development of BRI projects.

Establish the BRI Project Classification System and the Positive and Negative Lists

Classification of projects according to their environmental impacts is commonly used to manage financing of projects. For example, the Equator Principles (EP) require banks to differentiate projects by environmental risks as A, B, C. The Asian Infrastructure Investment Bank (AIIB), as stipulated in its Environmental and Social Framework,

classifies projects based on their environmental impacts to inform decision-making and management. Similarly, the China Banking and Insurance Regulatory Commission (CBIRC) Green Credit Statistics System encourages banks to differentiate according to the environmental risk of projects.

The classification of BRI projects investigates three major environmental objectives: pollution prevention, climate change mitigation, and biodiversity conservation. Based on positive and negative impact, projects are divided into three categories:

1. **Red projects—projects requiring stricter supervision and regulation:** Projects at risk of causing "significant and irreversible" environmental damage or major negative environmental impacts in one or more aspect of climate change mitigation, pollution prevention, and biodiversity protection. Red projects include coal-fired power, hydropower, petrochemical, and mining and metal smelting projects.
2. **Yellow projects—environmentally neutral projects with moderate impacts:** Projects in this category "Do No Significant Harm" (DNSH) to any environmental aspect, and any residual environmental harm can be mitigated by the project itself through affordable and effective measures within reasonable boundaries. Yellow projects include waste-to-energy projects and urban freight transportation with emissions standard above Euro IV/national IV standards (or similar local applicable ones).
3. **Green projects—encouraged projects:** Projects in this "encouraged category" have no significant negative impact on any environmental aspect of climate change mitigation, pollution prevention, and biodiversity protection, and positively contribute to at least one environmental aspect, particularly if they support international environmental agreements and conventions. Projects such as renewable energy development and utilization (solar and wind power plants, etc.) fall into this category.

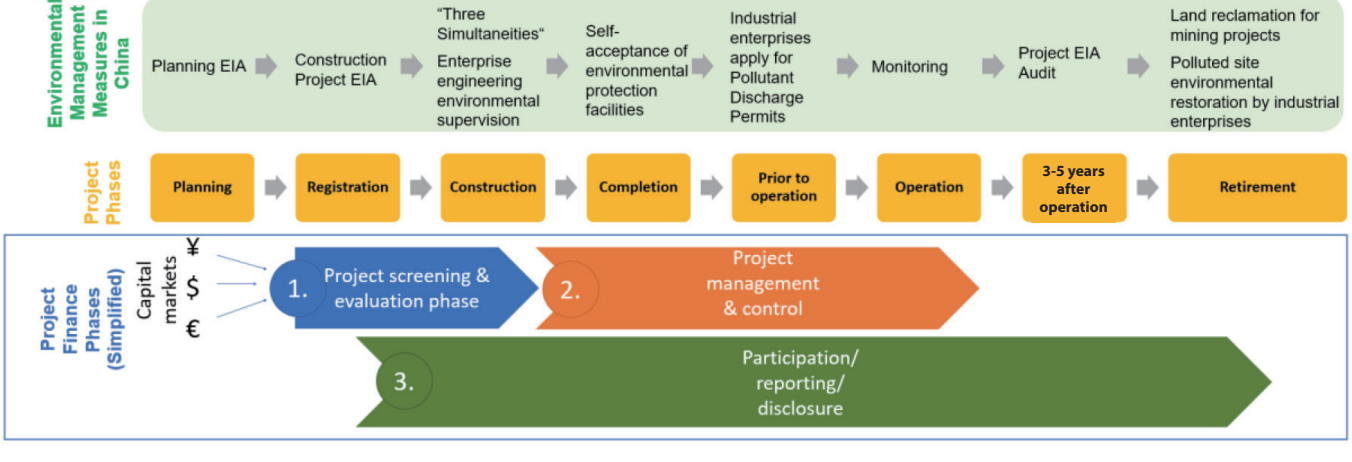
The project classification may be adjusted (upgraded or downgraded). If the project adopts sufficient environmental management measures to mitigate negative environmental impact and promote the realization of environmental objectives, it can be upgraded after rigorous evaluation. To ensure scientific, effective, and operable project categorization, a two-tiered system is proposed to evaluate the direct impact on and contribution to environmental objectives (the first step), and the availability of "mitigation" measures through environmental management, for example, by applying safeguards (second step).

Enhance the Whole Lifecycle of Environmental Management in Overseas Investment Projects

The in-depth study of Chinese and international regulations, norms, and applications has resulted in nine recommendations to shift overseas investment from brown to green:

Recommendation 1—Green overseas investment practices address all project phases: To accelerate green overseas investments, environmental concerns during the whole project lifecycle must be addressed. The project life cycle includes multiple phases. For investors the phases can be divided into project

Figure ES 1-1 : Three Phases of a Project's Lifecycle



Source: Authors.

Note: EIA = environmental impact assessment; the "Three Simultaneities" refers to China's requirement that pollution prevention facilities in construction projects should be designed, constructed, and put into use at the same time as the main project.

screening and evaluation, project monitoring and control, and public participation—reporting and information disclosure. Engaged stakeholders should take responsibilities to enhance the green development of the project throughout the lifecycle.

Recommendation 2—Exclusion List[1]**:** Global regulators and financial institutions provide Exclusion Lists of environmentally harmful projects that must not receive investment. Projects on Exclusion Lists include those that have severe and irreversible negative impacts on ecological development goals without feasible possibilities for mitigation. For example, almost 120 private and public financial institutions from 26 countries have agreed to exclude fossil fuel from their investments.

Recommendation 3—Environmental Impact Assessment: Project developers must obtain an independent Environmental Impact Assessment (EIA) for each project. According to many financial institutions (i.e., based on the Equator Principles) low-risk projects require at least a locally required EIA. For medium- and high-risk projects, the standards are more stringent and should be compatible with international best practice (e.g., World Bank Environmental and Social Standards [ESS] or International Finance Corporation [IFC] Performance Standards), which include disclosure and public participation and industry-specific EIAs. For example, the European Bank for Reconstruction and Development (EBRD) publishes its EIAs for public disclosure for a minimum period of 120 days, and the EIAs of all World Bank projects can be found online.

Recommendation 4—Differentiated conditions: Financial institutions consider environmental risks in their financing conditions (i.e., better financing conditions and fast-track approval for green projects, restraining the approval for red projects).

Recommendation 5—Environment and Social Management System: Financial institutions require an Environment and Social Management System (ESMS) from their clients for all medium- and high-risk projects. The ESMS includes environmental (and social) mitigation measures that are measurable and need to be reported at least every six months to the financial institution.

Recommendation 6—Grievance redress mechanism: Financial institutions provide an easy-to-access and transparent grievance redress mechanism for people and NGOs that are potentially negatively affected by projects throughout the project phases, starting during the project evaluation. Contact information is made readily available for affected persons, NGOs, and others who wish to contact the financial institution to express concerns or objections to a new or existing project in the institution's portfolio. The grievance redress mechanism must be available in local language(s). For example, the AIIB announced its complaints-handling mechanism in 2017, and the Green Investment Principle (GIP) 4 stipulates the setup of a resolution mechanism.

Recommendation 7—Covenants: Financial institutions include covenants in their investment agreements that allow them to work with clients to rectify breach of environmental and social agreements and, if need be, to exercise remedies, including calling events of default. For example, the Equator Principles stipulates such incorporation of covenants linked to compliance in its principles.

Recommendation 8—Public environmental reporting: Financial institutions provide independent reporting on the environmental performance of projects in their portfolio, including details on emissions, pollution, and biodiversity targets and impact; risk management; strategy; and governance. They use both required and applicable internationally recognized standards. For example, as of February 2020, over 1,000 organizations, representing a market capitalization of over US$12 trillion support the Task Force on Climate-Related Financial Disclosures (TCFD). The IFC applies the Anticipated Impact Measurement and Monitoring (AIMM) system. The Green Investment Principle for the Belt and Road (GIP) 3 stipulates disclosing environmental information.

Recommendation 9—International cooperation: Financial institutions can share environmental data with relevant global authorities to support global data repositories on climate and biodiversity. For example, the Equator Banks share both climate and biodiversity data of their investments.

Prioritized Action Areas in Forming the Green Development Guidance for BRI Projects

The BRI Green Light System depends on the interaction among a variety of stakeholders in the Chinese government, the financial sector, and financial sector clients. For the government to promote green development of BRI projects, we suggest the following:

1. **Establish a classification system for BRI projects.** Focus on their impact on environmental pollution, climate change,

[1] The Exclusion List is different from the red categorization of projects.

and biodiversity conservation, and further specify the lists of positive and negative projects with technical guidelines and details provided.

2. **Explore the environmental risk assessment for BRI key industries** in line with the environmental requirements of the host country, as well as with Chinese and international best practices. Guidance and provision of EIA criteria, requirements and tools for key BRI industries to conduct EIA is needed, as well as capacity building to relevant stakeholders

3. **Establish the mechanism for rigorous supervision and an Environment and Social Management System during the whole lifecycle** of the project and apply measurable environmental governance measures. Guide and provide capacity building to project investors and implementers to pursue greener overseas investment with improved ESMS policy, evaluation, management and reporting. Encourage investors to reduce potential environmental risks informed by the project classification and through a grievance redress mechanism that enables responding to environmental complaints in a timely and transparent manner.

4. **Establish a sound incentive and punishment mechanism** to guide financial institutions for differentiated management of projects, according to environmental risks and impacts. Encourage financial institutions, investors, project implementors, and government agencies to shift investment to green by classifying BRI project based on their environmental impact, and applying the appropriate lifecycle management featuring differentiated decision-making, risk evaluation, financing, performance review, and disclosure for projects on positive and negative lists.

5. **Support piloting and promote application of the Green Development Guidance** for Belt and Road Initiative (BRI) Projects. Considering the contexts of BRI countries, a classification system and project lists adapted to local resources, environment, and socioeconomic conditions should be developed as a reference for the host government; and local demonstrations of application should be promoted to encourage and facilitate its extension into more Belt and Road countries.

LIST OF ABBREVIATIONS

Abbreviation	Name
ADB	Asian Development Bank
AFD	Agence Française de Développement
AfDB	African Development Bank
BRI	Belt and Road Initiative
BRIGC	Belt and Road Initiative International Green Development Coalition
CBIRC	China Banking and Insurance Regulatory Commission
CDB	China Development Bank
EIA / ESIA	Environmental Impact Assessment / Environment and Social Impact Assessment
EU	European Union
Exim Bank of China	Export-Import Bank of China
FECO	Foreign Economic Cooperation Office (Ministry of Ecology and Environment)
GIP	Green Investment Principle
GEF	Global Environment Facility
GHG	Greenhouse gas
GIP	Green Investment Principles for the Belt and Road
GDG	Green Development Guidance for Environmental Alignment of BRI Investments

Abbreviation	Name
IADB	Inter-American Development Bank
IFC	International Finance Corporation
KfW	Kreditanstalt für Wiederaufbau
MEE	Ministry of Ecology and Environment of the People's Republic of China
MOF	Ministry of Finance of the People's Republic of China
MOFCOM	Ministry of Commerce of the People's Republic of China
NDRC	National Development and Reform Commission of the People's Republic of China
OECD	Organisation for Economic Co-operation and Development
OECD DAC	Development Assistance Committee of OECD
PBOC	People's Bank of China
SASAC	State-Owned Assets Supervision and Administration Commission
SDG	Sustainable Development Goal
TCFD	Task Force on Climate-Related Financial Disclosures
UN	United Nations

CHAPTER 1.

JOINT RESEARCH ON GREEN DEVELOPMENT GUIDANCE FOR BELT AND ROAD INITIATIVE PROJECTS

1.1 Research Background

Green and low-carbon development is supported by international consensus. China actively responds to climate change and promotes the process of global environmental governance. On September 22, 2020, President Xi Jinping delivered an important speech at the General Debate of the 75th Session of the UN General Assembly, pointing out that the Paris Agreement on climate change represents the general direction of global green and low-carbon transformation and the minimum action needed to protect the homeland, and that all countries must take decisive steps toward its goals. He also promised that China would enhance its nationally determined contribution (NDC), adopt more powerful policies and measures, and strive to achieve peak carbon dioxide (CO_2) emissions by 2030 and carbon neutrality by 2060. The international community generally lauded his stance, expecting the goals announced by China would have a great impact on the world's low-carbon transition and set a good example for the global response to climate change.

Building a Green BRI conforms to the trend of green development in the international community and is highly consistent with the 2030 Agenda for Sustainable Development and the philosophy of the Paris Agreement. Green BRI integrates green development and eco-environmental protection into the entire process of BRI construction, directly contributes to realizing indicators set by the 2030 Agenda for Sustainable Development, creates important opportunities for sustainable development for participating countries, and moves global ecological civilization to a new level.

Green BRI injects strong impetus into world economic growth and recovery. Since the financial crisis in 2008, global economic growth has lacked impetus. International economic cooperation has focused on exploring new growth points and economic development models to drive the depressed economy into a new growth cycle. The huge demand in developing countries, including emerging economies, for infrastructure and industrial development is expected to become a new driving force for world economic growth. In this context, China put forward the "Belt and Road Initiative" in 2013, hoping that by adhering to the principles of mutual cooperation, co-construction and sharing, and by policy communication, facility connection, unimpeded trade, financial flow, and labor exchange, it can create new opportunities for common development and shared prosperity for all countries and put forward China's solution to sustainable development.

Since the outbreak of COVID-19, the global economic downturn has intensified. Most countries have experienced unprecedented negative growth, constituting the most serious economic recession in recent years. According to the World Trade Organization, global trade decline caused by the epidemic may be worse than that caused by the 2008 global financial crisis. Against the shock of the epidemic, countries have realized that the world is one community with one shared future for mankind, and interconnections, openness, and inclusiveness are imperatives to alleviate the global crisis and achieve long-term development. In the post-epidemic era, BRI has injected strong impetus into world economic growth and recovery. Green recovery is an important driver for economic development: the development of Green BRI will provide a platform for all countries to share a resilient, inclusive, and sustainable development mechanism; it also helps implement the UN 2030 Agenda for Sustainable Development.

Since BRI was launched seven years ago, it has received positive responses from participating countries and the international community. Two hundred intergovernmental cooperation documents have been signed, and over 2,000 projects have been jointly carried out, providing jobs for thousands of people. As of November 2019, Chinese enterprises had invested a total of US$34 billion in overseas economic and trade cooperation zones built by countries along BRI, paid over $3 billion in taxes and fees to the host country, and created 320,000 local jobs on an accumulative basis. According to the World Bank's research, with the help of BRI, trade and foreign direct investment (FDI) of countries along the route will increase by 9.7 percent and 7.6 percent, respectively, bringing 3.4 percent growth in real income to economies along the route and 2.9 percent growth in global income.

BRI foreign investment projects face certain environmental and climate risks. At present, BRI construction has entered a new stage of high-quality development, which raises the requirements for promoting green infrastructure and strengthening the quality and assurance of the ecological environment. BRI foreign investment projects still face certain environmental and climate risks: First, some BRI participating countries are particularly vulnerable to environmental degradation. Regions such as Southeast Asia, South Asia, West Asia, North Africa comprise "developing" countries with rapid population growth and industrial development, so resource consumption and pollutant emissions still occur at a concerning rate. Second, BRI participating countries still fall short in grasping the green development concept and coming up to speed in eco-environmental protection ability, policy standards, and so on. Third, international cooperation projects are generally complex. In some cases, local laws and technical standards are vague, and the number and types of sustainable standards and evaluation methods are

insufficient, making it difficult for financial investors to ensure that all investment flows to sustainable infrastructure. For some sustainable infrastructure, the risk-adjusted income is too low due to lack of revenue flow or public policy incentives. China's BRI investment has been rising as a share in its global investment. Large infrastructure for transport and energy resource and manufacturing are among the key Chinese investment fields. When such investment takes place in countries of a high level of environmental sensitivity, it is even more urgent to mitigate and address the environmental and climate risks.

1.2 Significance

The significance of this study is reflected in four aspects:

First, promoting green development of BRI projects is the most fundamental requirement of Green BRI. President Xi Jinping has repeatedly emphasized that China will practice the green development concept, deepen cooperation in environmental protection, strengthen eco-environmental protection, and together to build a green BRI. Promoting overseas investment and construction projects to practice the concept of ecological harmony and green development is conducive for facilitating BRI connectivity in a green and comprehensive manner, integrating the concept of eco-environmental protection into all aspects and processes of BRI construction, and promoting sustainable development and common prosperity.

Second, promoting green development of BRI projects is essential in promoting global ecological harmony and building a green global community. Most BRI project countries are developing and emerging economies. In some areas with fragile and sensitive eco-environments and inadequate eco-environment standards, BRI projects face high environmental risks and greater pressure to promote green development. Improving eco-environmental protection of BRI foreign investment and construction projects, integrating environmental protection standards and norms of participating countries, and strengthening eco-environmental support and guarantees for BRI infrastructure construction will promote regional sustainable development and green transformation, as well as China's ability to participate in global environmental governance, toward fulfilling the goals of the 2030 Agenda for Sustainable Development, the Paris Agreement on Climate Change, the Convention on Biological Diversity, and other international environmental conventions.

Third, promoting green development of BRI projects helps to increase trust, dispel doubts, and build consensus in BRI construction. Green development is supported by global consensus. By improving policies and measures; strengthening green guidelines for corporate behavior; standardizing and guiding enterprises to fulfill their environmental and social responsibilities during BRI construction; encouraging them to abide by local environmental laws, regulations, standards, and norms; and promoting the development of green technologies and industries, the green development of BRI can gain the support of national governments, enterprises, and the public in participating countries.

Fourth, promoting green development of BRI projects is an important guarantee against major financial risks. Risk management is the foundation for financial stability. Environmental and climate risks of investment projects pose new challenges to the stable operation of economic and financial systems, and the development of green finance has provided new ideas for preventing and resolving systemic financial risks. At present, many financial institutions have not clearly understood and effectively responded to environmental and climate risks. According to the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) survey, only a fraction of large financial institutions in Organisation for Economic Co-operation and Development (OECD) countries and China have begun to use environmental risk analysis methods to assess environmental risks, and many of these applications are still at the experimental stage. The Green Development Guidance for BRI projects can provide an important reference for preventing major financial risks.

1.3 Purpose of the Study

This study provides targeted and operable policy recommendations for governments, and options for financial institutions, and corporations to improve the green management capacity, through research and development of lifecycle environmental management measures for investment projects. The recommendations help stakeholders jointly contributing to the implementation of sustainable development goals (SDGs) and global climate benchmarks.

Drawing on the experience of Chinese and global environmental financial risk management tools, the study designs a project classification methodology with management measures, and that is applicable to all BRI investments and is in line with the realities and needs of project host countries. This will allow all BRI investment projects to be managed in a graded and classified way and allow a flexible evaluation of the ecological, environmental, and climate impacts to surrounding areas.

The target audience of the study are stakeholders involved in BRI investment projects, particularly the following:

- Relevant government agencies responsible for formulation and enforcement of environmental management policies and

standards for overseas investment projects;

- Financial institutions that formulate investment strategy and decisions with considerations of climate and environmental risks; and
- Owners of investment projects responsible for identifying environmental and climate risks on-site and developing and implementing environmental and social safeguard measures accordingly, with a focus on lifecycle sustainable management practices.

It is important to note that the objective of the study is an acceleration of green and deceleration of non-green BRI projects. Thus, the results of the study focus on environmental aspects of projects, without focusing on financial feasibility or social considerations. This Green Development Guidance explores the development of outward investment projects in the Belt and Road while also preventing ecological and environmental risks, such as climate change and pollution, and promoting biodiversity conservation, by drawing fully on domestic and international experience and best practices. The classification guidelines and subsequent environmental management measures provide green guidelines for stakeholders to further identify and respond to ecological and environmental risks of overseas investments; promote the development of green investment, green trade, and green financial systems; and enhance the greening of Belt and Road projects. The overall objectives include the following:

- To build an outward investment ecological and environmental risk prevention system based on project classification, streamline methods to assess and reduce potential ecological and environmental impacts of projects, and align BRI projects to the United Nations Sustainable Development Goals (SDGs) and Paris Agreement climate goals, to share lessons and learnings with the green development to BRI countries.
- To improve outward investment regulatory mechanisms and lifecycle environmental management mechanisms and formulate green development guidelines tailored to the needs and realities of different stakeholders.
- To provide early warning mechanisms and green solutions to mitigate negative ecological, environmental, and climate impacts for Belt and Road projects, and improve pollution prevention and control and green development.
- To clarify the positive and negative lists of outward investment projects in the Belt and Road area, based on which to provide government regulatory authorities with a basis for green project management, to provide financial institutions with guidelines on green finance, and to guide enterprises in effectively assuming the main responsibility for ecological and environmental risks.
- To prepare for the application of the Green Development Guidance and form green demonstration projects with significant demonstration and popularization value. Emphasis will be placed on integrating projects with the social and economic development of the host country, with comprehensive consideration of its stage of development and resource and environmental endowments; active docking will be carried out with the relevant strategies, plans, and standards of the countries or regions where projects are jointly constructed to effectively promote the greening process of facility connectivity, drive local economic development with the green development of BRI projects, and enhance the greening of the local economy and competitiveness.

The research will help BRI investment projects promote sustainable development and fulfill international environmental conventions, including the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), the Paris Agreement, the Aichi Targets of the Convention on Biological Diversity, and the Post-2020 Global Biodiversity Framework.

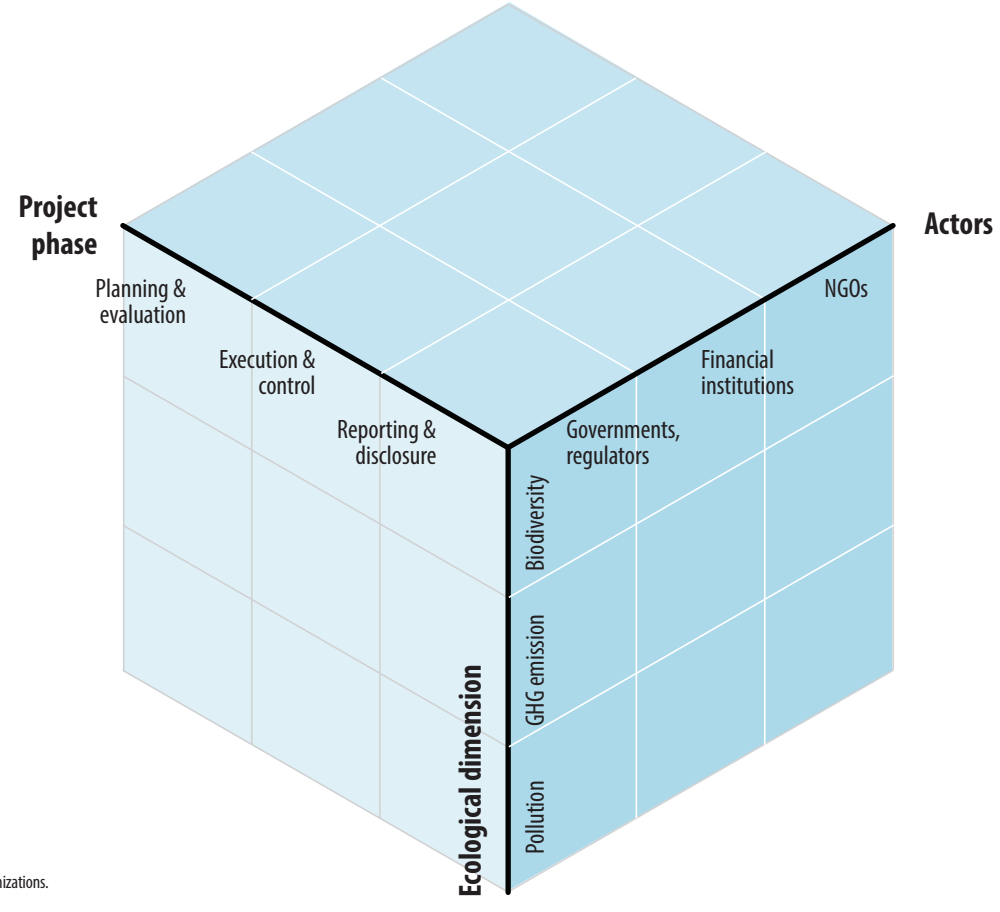
1.4 Methodology and Structure

To provide a guidance and classification for BRI project finance to accelerate green and decelerate non-green investments, research for the Green Development Guidance used extensive desk research, interviews with relevant stakeholders, and feedback mechanisms through workshops and seminars.

The study is structured as follows:

Chapter 2 provides an analysis of Chinese and global best practices, separately analyzing each stakeholder (government, financial institutions, NGOs, and associations) regarding their practices in encouraging and increasing green projects and reducing and ending brown projects. The study highlights the different roles of various actors and stakeholders in greening overseas investment for different project phases (project evaluation, project management, reporting) to manage environmental risks in the three environmental dimensions of pollution, greenhouse gas emissions, and biodiversity using the research matrix (Figure 1-1).

Figure 1-1 : Research Aspects of the Mapping of Best Practices



Source: Authors.
Note: NGOs = Nongovernmental organizations.

Chapter 3 provides the BRI project classification mechanism. First, the chapter proposes three project categories depending on the project's impact on three environmental aspects (pollution, climate, and biodiversity). It then puts forward a two-tiered classification process in line with Chinese and international practices in a combined taxonomy-based and process-based approach. Next, specific criteria for projects in energy, transport, agriculture, and manufacturing are put forward, along with specific thresholds for different environmental dimensions based on international practices for sustainable finance provided by governments as well as practice standards (e.g., International Finance Corporation [IFC] Performance Standards).

Chapter 4 proposes a classification list of BRI projects using the definition, criteria, and processes developed in Chapter 3. Using these instructions for classification, positive and negative lists of BRI projects in the energy, transport, agriculture, and manufacturing sectors are developed.

Chapter 5 provides nine recommendations to accelerate green and decelerate non-green BRI investments applicable to different stakeholders, based on the green finance practice and regulation research from Chapter 2. This chapter presents detailed recommendations, and specific sources, case examples and most relevant stakeholders/target audience, for developing the Green Development Guidance for BRI projects covering each project phase (planning/evaluation, project execution/management, and reporting/disclosure).

Chapter 6 identifies the prioritized areas for the next-step formulation of an operable Green Development Guidance for BRI Project (the Guidance). The chapter reviews existing green BRI policies and decision-making processes and from there outlines the key areas of future application of the proposals in Chapter 3 project classification and positive and negative lists, and Chapter 4 measures to enhance the whole lifecycle environmental management. It provides the ground for the development of the Guidance.

CHAPTER 2.

BEST PRACTICES TO ACCELERATE GREEN AND REDUCE BROWN INVESTMENT

The following sections provide an analysis of Chinese and global best practices, with separate analyses of each stakeholder (government, NGOs and associations, financial institutions). This method also underscores the different role each stakeholder plays in guaranteeing sustainable finance, with governments providing (national and supranational) regulation and policies, NGOs providing independent and international best practice tools, and financial institutions providing application policies and practices for their overseas investment activities. It is important to note that instruments of different stakeholders can span more than one phase of the project finance lifecycle (e.g., Equator Principles, European Union Taxonomy for Sustainable Activities [hereafter, "EU Taxonomy"]), and might therefore be mentioned at different points.

2.1 Government and Regulatory Practices

International investment and business activities depend on local and international government laws and related regulations. Accordingly, every country applies more or less stringent environmental laws and regulations, providing opportunities for investors to maximize returns and minimize risks. To avoid an acceleration of investments into "pollution havens" and thereby increase environmental risks, some countries have developed different guidelines, regulations, laws, and guidance for financial institutions and companies to invest abroad, including environmental considerations. Some jurisdictions, such as the European Union, in rare cases also provide jurisprudence to punish environmental violations for overseas projects where the institutional capacity in the third country is insufficient to address these violations (see Box 1).

One particular aspect to encourage green overseas investments by China and international governments is through voluntary guidance documents and mandatory regulations touching upon different aspects of the project finance lifecycle and of ecological development. These guidelines employ different measures through a variety of regulators and agencies, targeting both public finance and more broadly overseas direct investment through private entities.
In the public finance space, governments address national development finance institutions (DFIs) engaged internationally, multilateral development banks (such as the World Bank) by exercising their role on the boards, and national export credit agencies (ECAs). Governments also regulate or incentivize private investors for green project finance along the project finance lifecycle.

Box 1: Corporate Liability for Environmental Violations in Third Countries through Forum Non Conveniens versus Host Country Rule

Corporations, to protect themselves from possible litigation, try to build a corporate structure with subsidiaries so that they are immune from judicial review, or to render the review ineffective. Corporate legal structures pose a challenge to victims of environmental harm, who cannot properly obtain a remedy from these third-country subsidiaries, because of

- Lack of funds or assets of the subsidiaries, for example, after the subsidiary declares bankruptcy or closes (e.g., when the legal case drags on for too long); or
- Lack of access to impartial or sound justice or due process in the third country.

In most cases, victims cannot seek redress from the parent corporation jurisdiction because the forum is not appropriate (*forum non conveniens*).

To overcome the dilemma of allowing corporations to deny liability for their subsidiaries in third countries, Article 4 of the European Union (EU) 1215/2012, "Brussels Regulation" provides that "[S]ubject to the Regulation, persons domiciled in a member State shall, whatever their nationality, be sued in the Courts of the Member State,"[2] provides an opportunity to overcome forum non conveniens in special cases. In the 2019 case *Lungowe v Vedanta*, the British (still under EU law) court dismissed the *forum non conveniens* claim by the defendant, who argued that its Zambian mining subsidiary and not the parent company in the United Kingdom should be sued for environmental damage in Zambia. The UK court, however, conceded that the court of an EU member state cannot decline jurisdiction where the defendant is a company domiciled in that member state (in this case, the United Kingdom).

In the "Opinions on the People's Courts to Further Provide Judicial Services and Safeguards for the Development of the Belt and Road Initiative" issued in December 2019, China's Supreme People's Court writes that the judiciary shall "safeguard green development […], implement the BRI Green Investment Principles, improve the public interest litigation system and the system for compensation for ecological and environmental damage, stop environmental infringement, follow the principle of liability assumption of damages, facilitate ecological restoration, join efforts to build BRI big data platform for ecological protection, promote green infrastructure construction, green investment and green finance, and contribute to the green Belt and Road Initiative to protect the homeland where we live."[3]

Source: Authors.

[2] European Union Parliament and Council, "On Jurisdiction and the Recognition and Enforcement of Judgments in Civil and Commercial Matters."

[3] The Supreme People's Court of the People's Republic of China, "Opinions on the People's Courts."

2.1.1 Best government and regulatory practices along project finance

2.1.1.1 Exclusion List

Setting an "Exclusion List" is an effective regulatory approach to reducing "brown" investments. Governments, intergovernmental organizations, and relevant regulatory authorities establish criteria or provide a project list for prohibited investments based on environmental concerns.

Quitting coal in overseas investment is the most ambitious governmental exclusion pledge. These pledges are applied through national and bi-/multi-lateral development finance institutions (DFIs) and export credit agencies (ECAs). The environmental content of the Exclusion List is based broadly on international norms, such as the United Nations Global Compact (UNGC) principles and the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises. Excluded projects have significant negative impacts on the environment and do not have viable mitigation options.

"Exclusion Lists" are developed and applied by governments and regulators to regulate environmentally polluting investments. They often manifest in "negative," "phaseout," "prohibited," and "redline" investment policies, which lead to divestment in industries or projects. For example, the **National Development and Reform Commission (NDRC)** used the Exclusion List to guide the withdrawal of domestic investment from industries of high energy consumption, high environmental pollution, and high resource intensity. In its 2019 Catalogue for Industrial Restructuring, investment to more than 440 industries were prohibited toward a phasing out that considered environmental factors such as pollution prevention and control, greenhouse gas (GHG) reduction, and ecological protection. Such an exclusion approach is also applied to overseas investment, but not yet due to environmental concerns. In 2017, NDRC, the Ministry of Commerce, the People's Bank of China, and the Ministry of Foreign Affairs (MFA) jointly published the Guiding Opinions on Further **Guiding and Regulating the Direction of Overseas Investment** (No. 74 [2017]), which declined overseas projects in the "prohibited" category.[4]

Internationally, exiting coal and other fossil energy investment is the most ambitious exclusion action from governments toward reducing "brown" investment. Governments of the **United States, the United Kingdom, France, the Netherlands, and the Nordic countries** have already announced excluding coal from overseas investment. Most recently in 2020, **Japan** announced it would tighten funding criteria for foreign coal-fired power plants; the **Republic of Korea** introduced several bills aimed at banning overseas coal investment,[5] and both **Bangladesh** and **India** announced in 2020 that they would consider banning fossil fuel investments.

These exclusion pledges are often applicable to developmental financial institutions such as national and some bi-/multi-lateral development banks whose mission is to promote development policies. For example, following the French government's announcement in 2013 to no longer provide financial support for coal-fired power plant projects in developing countries,[6] the International Development and Solidarity Framework Act of July 2014 legally required the **French Development Agency (AFD)** "not to support coal-fired power projects in any form unless the project adopts carbon capture and storage (CCS) technology." Some countries have also extended the Exclusion List by including coal-fired power generation projects supported by public funds, such as export credit agencies **(ECAs)**.[7] As of the end of 2019, five of the **G20** countries had applied the Exclusion List policy to their DFIs, and three had extended the application to ECAs.

In addition to national policies, some countries encourage public financial institutions that conduct overseas business to follow the "exclusion" requirements of intergovernmental organizations. **OECD countries**, in particular, have encouraged export credit agencies to phase out financing of fossil fuel industries along the OECD's nonbinding framework for the orderly use of officially supported export credits. ECAs are encouraged to restrict financing of inefficient coal-fired power plants in line with the Sectoral Understanding on Coal-Fired Power Generation implemented since February 2016: projects that do not fall within the scope of coal-fired power plants described in the Sectoral Understanding can only receive export

[4] The "prohibited category" includes: (a) outbound investment involving the export of core technologies and products of the military industry without state approval; (b) outbound investment using technologies, processes, and products the export of which is prohibited; (c) outbound investment in the gambling and pornography industries; (d) outbound investment prohibited by the provisions of international treaties to which China is a signatory; and (e) other outbound investment that endangers or may endanger national interests and security.

[5] Pearl, "China Slow to Curb Coal Financing." Japan is to launch a review by the end of June 2020, aimed at tightening conditions for the export of coal-fired power plants, by Environment Ministry, Finance Ministry, and Industry Ministry (Reuters, "Japan to Tighten Export Policy on Coal-Fired Power Plants: Minister," February 25, 2020).

[6] With the exception of having CCS facilities in place.

[7] Unlike development finance institutions, national export credit agencies do not take the promotion of development as their main responsibility. They mainly promote overseas business by providing companies with loans, insurance, and export guarantees.

credit support if they are consistent with the buyer country's national climate protection strategy and if no other climate-friendly alternatives are available.

Negative screening is another strategy that financial sector supervisors across the world have started to explore. The **Network of Central Banks and Supervisors for Greening the Financial System (NGFS)**, a joint initiative of central banks and supervisory authorities of eight countries, including France, China, and the Netherlands, is currently working to encourage financial sector regulators to adopt the Exclusion List as a negative screening process to systematically exclude controversial companies, sectors, or countries from the investment, including those with negative environmental, climate, and ecological impacts. The Exclusion List is developed in accordance with global norms (such as the United Nations Global Compact [UNGC] Principles and the OECD Guidelines for Multinational Enterprises) and coupled with ESG approaches.

2.1.1.2 Green List

For China's domestic investment, China Banking and Insurance Regulatory Commission (CBIRC), People's Bank of China (PBOC), and the National Development and Reform Commission of the People's Republic of China (NDRC) have issued inclusion criteria or lists that provide guidance for investors on which projects or project categories are considered green. Among these, the 2020 Chinese Green Bond Endorsed Project Catalogue (Draft for Consultation) by NDRC, PBOC, and CBIRC reflects the synergy to international standards for green projects and removes controversial projects, such as the clean coal and thermal power generation, from the "Green List."

Among Green List approaches, the EU Taxonomy for Sustainable Activities (EU Taxonomy) 2019 is one of the most advanced and granular frameworks for inclusion and exclusion of projects based on environmental outcome. Apart from a list of environmental objectives, the EU's Taxonomy has specific guidance on environmental pollution and impact thresholds that define which projects should be considered green across a number of industries.

Government and regulators encourage, support, and guide overseas investment in green and sustainable projects in the form of a "Green List." The qualifications of "green projects" are usually measured against two criteria: one is based on environmental goals, that is, defining each environmental goal in a "list of environmental goals" to evaluate and select investment activities that contribute to environmental goals and have no negative impact, such as the **"Rio Marker" system** used by the OECD in foreign aid assessment. The other is based on investment activities, listing specific industries, projects, or economic activities allowed by the "Green Project List" through clear quantitative criteria and technical determinants. Documents such as the "Renewable Energy Sector Understanding" and "Climate Change Sector Understanding" under **OECD's Arrangement on Officially Supported Export Credits** are grouped as this type of criteria.

China is a pioneer in using Green Lists to guide and govern green investment. For domestic investment, China Banking and Insurance Regulatory Commission (CBIRC), People's Bank of China (PBOC), and National Development and Reform Commission of the People's Republic of China (NDRC) have published several documents providing "green project and industry lists" that contribute to green development. These include the CBIRC's "**Green Credit Guideline**" and other supporting documents[8] (2012), NDRC's "**Guidelines for Energy Efficiency Credit**" (2015), "**Green Industry Catalogue**" (2019), PBOC's "**Green Bond Endorsed Project Catalogue**"[9]. All these included industries and projects that contribute to a low-pollution and less GHG-emission–intense development in China.

China is still experimenting with using the Green List to guide overseas investments; in 2017, the State Council forwarded the **Guidance on Further Guiding and Regulating the Direction of Overseas Investments**, jointly drafted by NDRC, MOFCOM, PBOC, and MFA. Supported investments are included in the "encouraged category." However, environmental factors are not among top considerations in developing an "encouraged list."[10] It is noteworthy that in its draft for consultation, the latest "**Green Bond Endorsed Project Catalogue 2020**" reflects widely applicable international standards for assessment of green projects, and

[8] The documents include "Green Credit Statistics System," 2013, and "Green Credit Key Performance Indicator," 2014.

[9] Issued in 2015 and revised with NDRC and China Securities Regulatory Commission [CSRC) in 2020 for consultation.

[10] Encouraged overseas investments in the Guidance on Further Guiding and Regulating the Direction of Overseas Investments, as mentioned above include those focusing on promoting overseas investments that bring benefits to the Belt and Road Initiative and the surrounding infrastructure, in particular, transport and communication infrastructure, steadily driving superior production capacity, quality equipment, and technical standards; strengthening investment cooperation with overseas high-tech firms and advanced manufacturing enterprises and encouraging the establishment of research and development (R&D) centers abroad; participating in the exploration and development of offshore energy and resources based on careful assessments of economic efficiency; focusing on expanding overseas cooperation in agricultural fields, in areas such as forestry, animal husbandry, and fishery; promoting overseas investment in the services sectors such as business, culture, logistics, and other services in an orderly manner; and supporting qualified financial institutions to establish branches and service networks abroad to conduct business according to law.

Table 2-1: Example from EU Taxonomy on Environmental Thresholds for Inclusion, Proposed by EU-Commissioned Technical Expert Group

Electricity generation	1. 100 g CO_2e/kWh, declining to 0 by 2050 2. Threshold reduced every 5 years in line with a trajectory to zero net CO_2e in 2050 3. LCOE analysis (ISO 14044) not required for some technologies (renewables) 4. LCOE analysis required for new hydro & geothermal, fossil fuels, bioenergy 5. Nuclear
Electricity transmission & distribution (T&D)	All investments in T&D infrastructure, EXCEPT the following: 1. Those dedicated to directly connecting or increasing connections to plants above emissions threshold 2. Those dedicated to connecting additional consumption load without demand-side management capability Upgrades to T&D System Architecture, which incorporates any of the following: 1. Third-generation smart meters and communication system 2. Equipment that increases RE usage (e.g., voltage control measures to allow more RE infeed) 3. Sensors for forecasting RE production, automation of substations/feeders, control rooms, and software 4. Demand-side management and improved control of grid, or enabling exchange RE between users

Source: EU Technical Expert Group on Sustainable Finance, EU Taxonomy 2019.

Note: CO_2e/kWh = Carbon dioxide equivalent per kilowatt hour; LCOE = Levelized cost of energy; RE = renewable energy.

removes internationally controversial categories such as clean coal and thermal power generation. The Catalogue will apply to bonds financing overseas projects.

Among Green List approaches, the **EU Taxonomy** for Sustainable Activities one of the most advanced and granular classification frameworks. The EU Taxonomy is a key component of the Sustainable Finance Action Plan, which, as its first action, established a classification scheme for "green" economic activities. Apart from a list of environmental objectives, the EU's Taxonomy has specific guidance on environmental pollution or impact thresholds (see Table 2-1) that define which projects should be considered green across a number of industries, such as electricity production, transmission, and distribution; carbon capture and storage; transport; agriculture and forestry; manufacturing; manufacturing equipment for efficient buildings; waste; water and sewage; and buildings, thus forming "a list of industries."

2.1.1.3 Evaluation of environmental outcomes

Governments have issued strong guidance on the requirement to conduct environmental and social impact assessments. Internationally, governments and intergovernmental organizations require international investors to consider and address potential environmental impacts and risks, including biodiversity, climate, and pollution in decision-making and risk management, benchmarking to some well-established international standards such as the World Bank Safeguard Policies and IFC Environmental and Social Performance Standards.

The EU Taxonomy 2019, based on the best practice from multilateral financial institutions, has set the environmental impact assessment principles as "Making Substantial Contribution" and "Do No Significant Harm (DNSH)."

Governments have issued guidelines and regulations to standardize EIA procedures and to encourage or require the use of safeguards to minimize environmental harm.

The EIA approach is widely used in management of investments within China. The Ministry of Ecology and Environment's (MEE)[11] "**Environmental Impact Assessment Law**," issued in 2002 and currently under revision, requires Environmental Impact Assessments (EIAs), depending on the potential environmental impact of the project. Thanks to years of implementation, China has set up an

[11] Note that if not marked differently, only the current names of governmental bodies are used in this report.

environmental governance chain covering the entire process of construction. The Chinese MEE, PBOC, and CBIRC joint "**Opinions on Implementing Environmental Protection Policies and Regulations to Prevent Credit Risks**" issued in 2007 mandates that commercial banks require an EIA as a necessary condition to approve domestic loans or limit credits or loans to enterprises/companies in violation of environmental laws.

For China's overseas investments, the document "**Environment Protection for Overseas Investment and Cooperation**," jointly issued by MEE and Ministry of Commerce (MOFCOM) in 2013 took a host country approach, recommending enterprises conduct EIAs and appraisal with respect to host country regulation; comply with host country emission standards; and protect and compensate for ecosystem and biodiversity in the local context. Accordingly, enterprises must release environmental performance information. The "Host Country Standard" was later updated in MOFCOM's **Notice on Furthering Environmental Protection in Foreign Investment and Cooperation**, 2015, and **Guiding Opinions on Promoting Green Belt and Road**, 2017, which require the application of "international standards as substitute" in the absence of host country regulation, but do not require applying the more stringent of the two, such as the Equator Principles,[12] among others.

Internationally, the OECD's, "Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence (the **OECD 'Common Approaches**')" has provided guidance on common approaches for undertaking environmental due diligence for export credit agencies since 1999 and has been mandatory for participants since 2003. Common Approaches consider and address potential environmental impacts and risks including biodiversity, climate, and pollution in decision-making and risk management, benchmarking to some well-established international standards, such as the **World Bank** Safeguard Policies and **IFC** Environmental and Social Performance Standards and adopting the "Screening-Classification-Management" approach by conducting EIA procedures.

The **EU Taxonomy** 2019, based on the practice of multilateral financial institutions, has set the EIA principles as "Making Substantial Contribution" and "Doing No Significant Harm (DNSH)." It provides a list of 67 economic activities with clear performance criteria for their contribution to six environmental objectives, including climate change, environmental protection, and biodiversity. Technical screening criteria were set to determine "Substantial Contribution" to achieving any environmental objectives and include intense safeguards through "Do No Significant Harm" to avoid violation of any other environmental objectives. The Taxonomy technical support document designs a two-step inclusion method (Figure 2-1), through which it prioritizes environmental objective-based screening so that an investment must contribute substantially toward "mitigating climate change," and then guides users to examine whether the investment does significant harm to other environmental goals. The EU Taxonomy further provides specifics on how to address DNSH criteria (Appendix 1 provides an example of DNSH criteria for cement manufacturing).

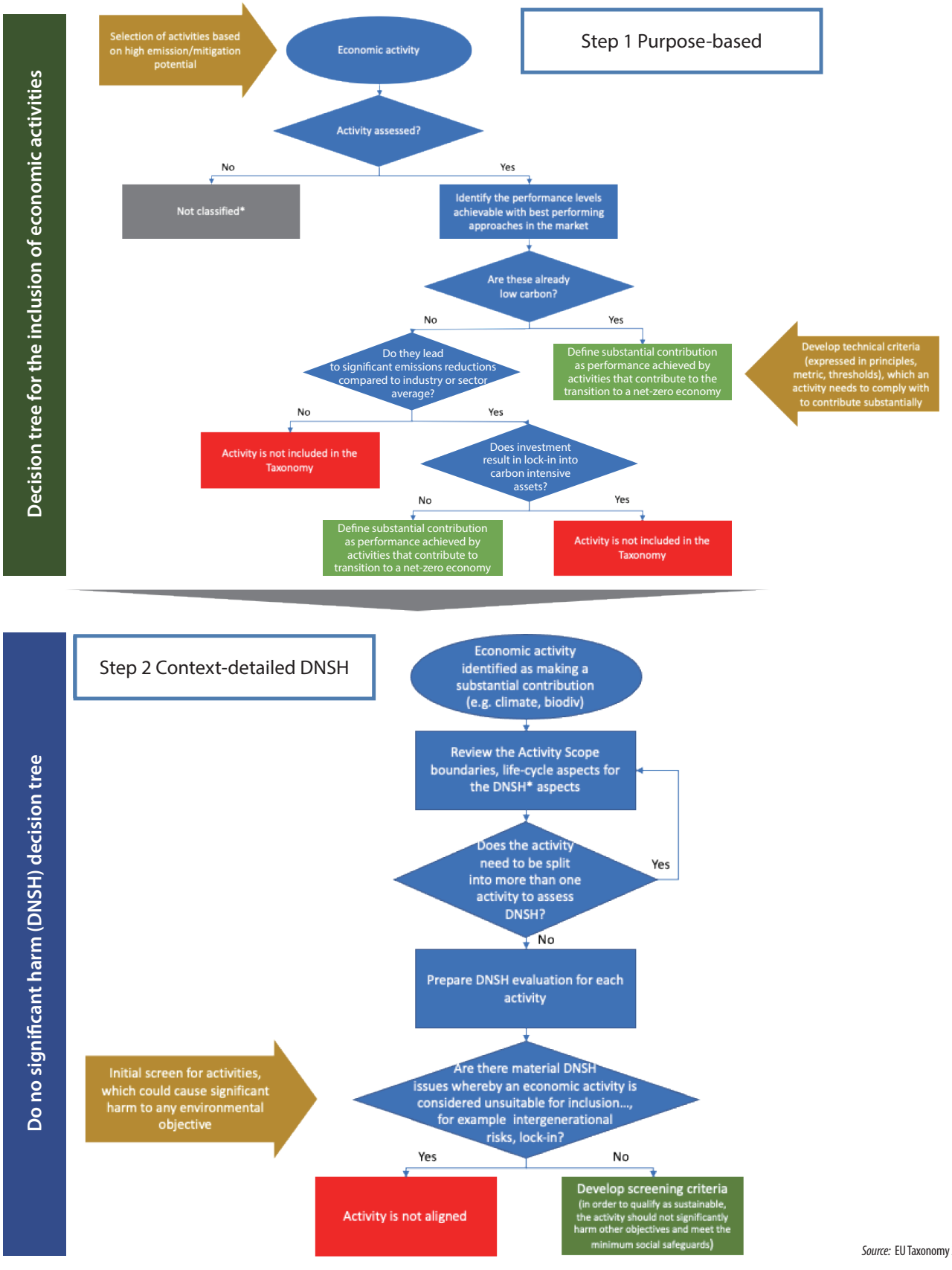
A number of governmental bodies have also applied a **Strategic Environmental Assessment (SEA)** to evaluate environmental implications of a proposed policy, plan, program, or pipeline of projects. An SEA provides means for government and nongovernment stakeholders to look at cumulative effects of projects and appropriately address these at the earliest stage of decision-making.[13] The **European Commission**, for example, has published guidance on the SEA Directive in Implementation of Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment for all its member countries. In the developing countries, the government of Myanmar and the Mekong River Commission (MRC) have also commissioned the SEA study in the energy sector to sustainably develop hydroelectric energy in the country and the region by balancing electricity generation with optimized environmental and social outcomes.[14]

[12] The Equator Principles are explained in the section on financial institutions.

[13] OECD, "Strategic Environmental Assessment and Environmental Impact Assessment (SEA)," OECD, accessed November 26, 2020, https://www.oecd.org/env/outreach/eapgreen-sea-and-eia.htm.

[14] International Finance Corporation (IFC), "Strategic Environmental Assessment of the Myanmar Hydropower Sector" (Yangon: World Bank, 2018), https://openknowledge.worldbank.org/handle/10986/31256.

Figure 2-1: Inclusion and Do No Significant Harm Process



Source: EU Taxonomy 2019.

2.1.1.4 Differentiated project management

Governments often require investors to establish and maintain an Environmental and Social Management System (ESMS) to provide differentiated management based on a project's impact evaluation outcomes. In China, government bodies have worked with financial regulators and accumulated experience in associating differentiated management to environmental performance in shifting domestic investment to low carbon. Through joint efforts across the finance and environment ministries, both incentive and punitive measures were tested, including mandating inclusion of environmental violations in the national credit information system.

Globally, differentiated governmental policies on overseas investment have mostly focused on requiring the adoption of appropriate technologies to reduce emissions from major emissions-producing projects and providing preferential financial conditions for green projects.

Coordination between financial regulators is a government policy and management measure widely adopted across the world to encourage green and reduce brown investment. Specific measures include using green finance and providing incentives to projects of higher environmental performance, and imposing constraints or punitive measures on projects that fail the environmental assessment.

Through a series of concerted actions by regulators, China has accumulated experience in shifting domestic investment from "three highs and one low"[15] industry to low-carbon and sustainable development. One example is the PBOC, CBIRC, and MEE jointly announced **Opinion on Implementing Environmental Protection Policies and Rules and Preventing Credit Risks** (in 2007 with later update in 2013[16]). This policy document mandates financial institutions to stop credit support for restricted or obsolete projects, on the one hand; and, on the other hand, seeks to align financing with EIA, requiring information on environmental violation, approval, or accreditation to be incorporated into the national unified basic database of enterprise credit information. It is thus a powerful tool for financial institutions to grant credit under preferential or strict conditions and to continuously monitor the environmental impact of a project. The **State Council's Guideline on Establishing a Modern Environmental Governance System**, 2020, once again mandates that the environmental violation record will be integrated into the credit system and proposes linking pollution permits to EIA and to financial products. Financial regulators also incentivize banks that provide green financing.[17] For overseas investment, The **Guidelines on Further Guiding and Regulating Overseas Investment** jointly drafted by NDRC, MOFCOM, PBOC, and MFA stipulated an "encouraged" category, where projects listed by the above ministries are eligible for favorable conditions. In an early policy document (the **Notice on Industrial Guiding Policies for Overseas Investment and Guiding Industrial Catalogue for Overseas Investment**, 2006), favorable terms such as concessional loans from policy banks[18] were to be offered for projects from the "encouraged" list.

For overseas investments, the OECD passed basic guidelines that stipulated investors establish and maintain an Environmental and Social Management System (ESMS) to minimize environmental, social, and health risks as early as 1976.[19] In practice, until today, most government policies are concerned with requirements for major projects to **use appropriate technologies** to cut emissions and with providing preferential funding for green projects. Carbon capture and storage equipment is required by many national, bilateral, and multilateral DFIs when financing coal-fired power plants. In addition, favorable terms in public financing is offered to green projects, with the **OECD environmental due diligence for ECAs**. Consequently, investment in certain sectors, such as renewable energy, can be encouraged with better-than-standard financing terms, as well as other favorable conditions, such as a longer tenure of 18 instead of 10 years, or more flexible repayment structures.

[15] Meaning enterprises and projects with high investment, high energy intensity, high pollution, and low economic efficiency.

[16] MEE, NDRC, PBOC, and CBIRC, "Notice on Issuing the Measures for the Evaluation of Enterprise Environmental Trustworthiness (trial)," 2013.

[17] Such as the PBOC Notice Regarding Promoting Credit Asset and Collateral in Central Bank Evaluation, 2017, improves relending policy, namely by accepting green loans in the short-term lending facility (SLF), as well as by accepting green bonds at AA rating as collateral in its medium-term lending facility (MLF). Furthermore, since 2018, banks' green performance is included as a factor in the PBOC Macroprudential Assessment (MPA), by which the interest rate given to a bank on its required reserves in PBOC is increased if the bank is assessed to be greener.

[18] The current policy banks in China are the China Eximbank and the Agricultural Development Bank of China.

[19] Burger et al., "Making FDI Work for Sustainable Development." The guidelines included collection and evaluation of adequate and timely information regarding the Environmental, Health, and Safety impacts of companies' activities; establishment of measurable objectives and, where appropriate, targets for improved environmental performance, including periodically reviewing the continuing relevance of these objectives; and regular monitoring and verification of progress toward Environmental, Health, and Safety objectives or targets.

2.1.1.5 Information disclosure and reporting

Reporting requirements from government regulators on sustainability issues have developed rapidly over the years, to cover overseas investment activities and mandatory disclosure. As in China, the latest "Guideline on Establishing a Modern Environmental Governance System" by State Council 2020 has clearly stated the next steps for mandatory environmental information disclosure for listed companies and bond issuers.

Governments around the globe set up guidelines for the content and format of the reporting, such as the EU Taxonomy, which has provided a stringent framework for information disclosure for financial institutions. Apart from direct regulatory measures, governments also encourage financial institutions to conduct environmental due diligence in overseas investments, including disclosing the environmental impact of investment projects classified as causing significant risks to the environment.

Information disclosure and reporting often requires a higher degree of technical capability for measurement, reporting, and verification (MRV) among project owners, financial institutions, and third parties.

The MEE's **Announcement on Corporate Environmental Information Disclosure** 2003 is China's first policy on corporate environmental information disclosure. Since then, the Chinese government has set up either voluntary or mandatory guidance and requirements for content and format for environmental information disclosure. Target users are listed companies, debt issuers, state-owned enterprises and key corporate polluters, financial institutions, and the green credit business of the banking industry. Governmental actions are moving toward coverage of overseas operations and the transition from voluntary to mandatory disclosure. For instance, the State-Owned Assets **Supervision and Administration Commission (SASAC)** requires all state-owned enterprises (SOEs) to release corporate social responsibility (CSR) reports annually, which includes environmental performance and should cover overseas business. It does not require an independent audit of an SOE's environmental performance as of now. The latest **"Guideline on Establishing a Modern Environmental Governance System"** by State Council, 2020, has clearly stated the next steps for mandatory environmental information disclosure for listed companies and bond issuers.

Globally, a harmonized definition of "green" helps further standardized and stricter requirements on environmental reporting. The **EU Taxonomy** is the most recent attempt to create a universal language across users. It sets out comprehensive instructions on what needs to be covered in environmental disclosures, first requiring adoption by financial institutions in their reporting on nonfinancial information from 2021 onward. Government policies and requirements on environmental information disclosure usually take the following forms:

- **One type of regulation is mandated by international conventions and agreements** to which a country is signatory; these are mostly limited to public commitments and by investment level. The OECD's overseas development assistance (ODA) finance agreement, OECD-Development Assistance Committee (DAC), for example, obliges its member countries to indicate in their report to OECD the environment contribution of ODA using the "Rio Marker." The Rio Marker constructs a scoring system against biodiversity, climate change mitigation, climate change adaptation, and desertification. The reports are published online. This reporting is supplemented by the United Nations Framework Convention on Climate Change (UNFCCC) climate finance reporting.
- **The other measures are at enterprise/project level**, through CSR reporting requirements, nonfinancial information disclosure requirements, disclosure requirements at stock exchanges, and facility/installation level emission disclosure from regulators. For example, the EU's Directive 2014/92/EU requires large undertakings and groups, including all listed companies, banks, and insurance companies, to publish "reports on nonfinancial information," including environmental information. Member states were required to transpose the directive into national laws and policies by the end of 2016. France was the first country to encode into law[20] the mandatory climate disclosure for institutional investors in addition to corporate disclosure requirements, that investors must report on the financial risks related to climate change and describe the measures implemented to tackle these risks. Reporting criteria benchmark to a collection of international, European, and national guidelines, for example, UN Global Compact and OECD Guidelines for Multinational Enterprises. Core aspects to be covered include land use, water use, greenhouse gas emissions, and use of materials.
- **Besides these direct regulatory measures, governments also push for reporting by encouraging DFIs and other financial**

[20] The Energy Transition Law (in force from January 1, 2016) Article 173.

institutions to set up environmental due diligence in their overseas investments, where assessing and reporting on such performance is a key part of the environmental safeguard plan, at least for projects classified as having considerable risk to the environment.

In the face of increasingly stringent and standardized disclosure requirements and frameworks, project implementers, financial institutions, and third-party institutions also need to build their capacity to measure, review, and validate the content of reports.

2.1.2 Best practices across environmental aspects

2.1.2.1 Environmental pollution prevention and control

Several governments, including of **EU countries**, the **United States**, and many other nations, require assessments and reporting on environmental performance of their public financing. The **German government** mandates the development financing from Kreditanstalt für Wiederaufbau (KfW) and export and investment financing from KfW-IPEX to conduct environmental and social audits for overseas financing. This assessment must at minimum apply internationally recognized standards, such as World Bank or EU standards, in addition to the relevant national rules. The principle to adopt "the highest rule of recognized international standards, home-country standard, or host country standard" as a minimum is considered best practice in regulating public financing vis-à-vis assessing environmental performance.

2.1.2.2 Climate change mitigation

Several governments try to ban investment in fossil fuels (particularly coal) outright; create obstacles for investment in polluting industries; or require disclosure of carbon emissions by financial institutions/banks of their investment projects. Also, reporting on GHG emissions from high-carbon sectors is included in the **OECD Environmental and Social Due Diligence Guidance for Export Credit Agencies**. It lists specific sectors and refers participants to internationally recognized methodologies (e.g., World Resources Institute/World Business Council for Sustainable Development [WRI/WBCSD] **GHG protocol**) for calculation. The framework recommends the estimation of annual GHG emissions from all fossil fuel power plant projects as well as other projects with projected emissions in excess of 25,000 tonnes CO_2-equivalent annually, and further reporting on efforts to avoid, minimize, and offset CO_2 emissions for thermal and nuclear power plants.

2.1.2.3 Biodiversity conservation

Global conventions on biodiversity are legislated in overseas investment laws and regulations in all signatory countries. This is mainly reflected in development financial institutions' charters, and biodiversity-sensitive areas are used as a screening criterion in safeguard policies and practice. To date, the **EU Taxonomy** has laid out the most detailed assessment method for ecosystem/biodiversity for specific economic activities. In the technical report, the Taxonomy elaborates on the standards of assessing "Do No Significant Harm" to ecosystems for each economic activity, which not only covers results-based avoidance of harmful acts, but also, importantly, articulates preventive measures and possible contributions toward a better ecosystem.

Additionally, the EU requires developers to include a biodiversity aspect in their EIA reports. The **EU EIA Directive** (85/337/EEC)[21] requires member states to ensure that projects likely to have significant effects on the environment because of their nature, size, or location are subject to an assessment of their environmental effects. The EIA Directive prescribes minimum requirements for the types of projects that should be assessed, the main obligations of developers, the assessment's content and provisions on the participation of competent authorities and the public. The EIA Directive references "biodiversity" and "species and habitats" protected under the "Habitats Directive (92/43/EEC)" and the "Birds Directive (2009/147/EC)." By publishing the "Integrating Climate Change and Biodiversity into Environmental Impact Assessment" for EIA practitioners and authorities, the EU also forces project developers to include biodiversity considerations into EIAs for cross-border projects.

Chinese and international research teams are jointly developing the **Environmental Risk Screening Tool (ERST)**[22] to map projects in BRI countries to avoid encroachment into biodiversity hotspots and assess impact on environmental resources at an early stage of project development.

2.2 Financial Institutions' Policies and Practices

Financial institutions, such as private financial institutions (FIs) and national and bi-/multi-lateral development finance institutions (DFIs) are engaged in large-scale overseas infrastructure investments with significant environmental impacts. Besides adhering to national regulation, many FIs and DFIs have developed their own policies, safeguards, and practices to minimize environmental harm and risk.

[21] European Parliament and European Council, "Directive 2014/52/EU."

[22] Paulson Institute, "Promotion of Environmental Risk Screening Tool (ERST) for China's Overseas Investment."

These developments have become necessary when local regulations in host countries are insufficient to address environmental risks, external stakeholder pressure (e.g., from shareholders or international customers), or internal stakeholder pressure (e.g., management, staff).

Two practices for financial institutions, the **Equator Principles (EP)** for private financial institutions (see Box 2) and the **Five Voluntary Principles for DFIs** (see Box 3), are considered most developed and widely applied.

Box 2: Equator Principles—Best Practices for Managing Environmental Risks for Financial Institutions

The most complete framework on environmental and social risks developed and applied by financial institutions is the Equator Principles (EP). Since its establishment in 2003, over 100 private institutions from 37 developing and developed countries have become members of the EP.[23] The EP was updated in July 2020 and applied globally and to all industry sectors. It addresses particularly project finance, project-related corporate loans, bridge loans, and project-related acquisition finance. The EP covers 10 principles:

1. Projects are classified in three categories:
   a. Category A with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible, or unprecedented.
   b. Category B with potential limited adverse environmental and social risks that are generally site-specific and largely reversible and readily addressed through mitigation measures.
   c. Category C with minimal or no adverse environmental and social risks.

According to this categorization a more or less stringent application of the other nine principles is required.

2. Environmental and Social Assessment to be conducted by the client, including measures to minimize, mitigate, and/or compensate for negative impacts. This includes a Climate Change Risk Assessment:
   a. For all Category A and, as appropriate, Category B projects, including consideration of relevant physical risks as defined by the Task Force on Climate-Related Financial Disclosures (TCFD).
   b. For all projects in all locations when Scope 1 and Scope 2[24] emissions are expected to be more than 100,000 tonnes of CO_2-equivalent annually. Consideration must be given to climate transition risks and an alternatives analysis to reduce greenhouse gas emissions.
3. Application of Environmental and Social Standards with the application of IFC Environmental and Social Performance Standards and World Bank Environmental, Health, and Safety (EHS) Guidelines for countries with weaker local regulations based on an independent environmental and social consultant.
4. Ongoing implementation of Environmental and Social Management Plan (ESMP) for Category A and B projects.
5. Stakeholder engagement for all Category A and B projects, a requirement for the financial institution to require the client to demonstrate effective stakeholder engagement on an ongoing basis in a structurally and culturally appropriate manner.
6. Establishment of grievance mechanisms for all Category A and, as appropriate, Category B projects.
7. The requirements for independent review for Category A and B projects.
8. The integration of covenants for financial institutions to have remedies to address shortcomings of their clients in environmental protection, including decommissioning of facilities. Covenants are required for Category A and B projects.
9. Independent monitoring and reporting throughout the life of the loan for Category A and, as appropriate, for Category B projects.
10. Reporting and transparency that includes online publication of the following:
    a. Summary of the Environment and Social Impact Assessment (ESIA), including climate change risks and impacts
    b. Greenhouse gas (GHG) emission levels on an annual basis
    c. Biodiversity data with the Global Biodiversity Information Facility (GBIF)

Source: The Equator Principles, "The Equator Principles July 2020."

[23] The following four Chinese commercial banks are signatories of the Equator Principles: Bank of Hangzhou (since July 2019), Bank of Jiangsu (since January 2017), Chongqing Rural Commercial Bank (since February 2020), and Industrial Bank (since October 2008). None of these banks are currently key banks for the Belt and Road Initiative.

[24] Scope 1 (direct emissions) and Scope 2 (indirect emissions from electricity purchased and used)

Box 3: Five Principles for Development Finance Institutions

The Five Voluntary Principles were adopted by members of the International Development Finance Club (IDFC), including China Development Bank, to address climate change and implement SDGs. By September 2020, over 48 financial institutions, including 23 bilateral, regional, and national development banks, as well las 13 commercial financial institutions were part of the Initiative.

1. Commit to climate strategies
Be strategic when addressing climate change by reflecting institutional commitments in strategic priorities, policy commitments, and targets. This enables the integration of climate change considerations in a financial institution's lending and advisory activities over time.

2. Manage climate risks
Be active in understanding and managing climate risk in assessing portfolios, working with clients to determine appropriate measures for building resilience to climate impacts and improving the long-term sustainability of investments.

3. Promote climate-smart objectives
Identify instruments, tools, and knowledge on how best to overcome risks and barriers for low-carbon and resilient investments. This includes mobilizing and catalyzing additional financing and developing specialized financing vehicles/products such as green bonds, risk-sharing mechanisms, and blended finance. Engage clients and other stakeholders (e.g., rating agencies, accounting firms) on climate change risks and resilience, and share lessons of experience to further mainstream climate considerations into activities and investments.

4. Improve climate performance
Set up operational tools to improve climate performance in all activities. Monitor indicators tied to climate change priorities, including greenhouse gas (GHG) emission reporting, lending, and investment, climate-conscious asset allocations, and the institution's own climate footprint.

5. Account for climate action
Be transparent and report, wherever possible, on the climate performance of your institution, including increases in financing of clean energy, energy efficiency, climate resilience, or other climate-related activities and investments. Transparently report the climate footprint of the institution's own investment portfolio, and how the institution addresses climate risk.

Source: Climate Action in Financial Institutions 2020.

2.2.1 Best financial institution practices along project finance

2.1.2.1 Exclusion List

A number of financial institutions have developed "Exclusion Lists" that explicitly exclude projects involving significant GHG emissions (such as fossil fuels) and biodiversity loss (such as unsustainable agriculture and fisheries). These include bilateral and multilateral development finance institutions, national development finance institutions, and a range of commercial finance institutions. The Exclusion Lists voluntarily implemented by financial institutions have thus informed more ambitious national commitments, such as in the area of biodiversity conservation.

Financial institutions exclude projects that do significant and irreversible environmental harm to any of the three environmental dimensions of pollution, greenhouse gas emissions, and biodiversity.

Several DFIs and FIs have issued lists or categories of projects that are excluded from financing due to environmental concerns. As of August 2020, almost **120 major FIs** from 26 countries had restricted investments in fossil fuels, particularly in coal[25] (including a number of DFIs, such as the German DFI Kreditanstalt für Wiederaufbau (KfW), the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD),[26] and the French DFI Agence Française de Développement (AFD). Most recently in September 2020, Jin Liqun, president and chair of the board of **AIIB** announced that the Bank would not finance any coal-fired power plants or any projects that are functionally related to coal.[27] In the Novermber 19th panel session for the

[25] Institute for Energy Economics and Financial Analysis, "Over 100 and Counting." More examples can also be found here: Asia Investor Group on Climate Change et al., "Financial Institutions Taking Acton on Climate Change."
[26] EBRD 2018 policy also limits upgrading existing coal-fired power plants, coal mining, and upstream oil development projects (with the exception of those projects that reduce GHG emissions).
[27] Jin Liqun, AIIB president and chair of the board at the launch of the AIIB-Amundi Climate Change Investment Framework, Sept. 9, 2020.

conversation on Asia's energy destiny at Bloomberg New Economy Forum, President of AIIB Jin Liqun announced that the Bank is to update the investment strategy in the energy sector. These institutions, which use public funds to invest abroad, especially the national development financial institutions, are required often by national "Exclusion List" commitments and are also at the forefront of exploring the greening of investments abroad, with exploratory and self-implemented Exclusion Lists informing more ambitious national commitments. The **national DFIs in Brazil and Switzerland**, for example, were among the first to begin conditionally excluding fossil fuel financing before governments made their Exclusion List commitments.

In addition to a special focus on fossil energy investments based on climate change and integrated environmental impacts, the impact on biodiversity is the main concern of DFIs' Exclusion Lists. The AFD excludes a variety of project types that endanger biodiversity, such as trade in animals not complying with the Convention on International Trade in Endangered Species, fishing using drift nets of more than 2.5 kilometers (km) in length, as well as "any operation leading to or requiring the destruction of a critical habitat, or any forestry project which does not implement a plan for improvement and sustainable management."[28] Another example is **AIIB** excluding "commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; production or

Box 4: Exclusion Lists of the Asian Infrastructure Investment Bank

International development banks, such as the Asian Infrastructure Investment Bank (AIIB), have developed an Exclusion List with projects that are excluded from receiving investment permission. AIIB's Exclusion List[30] includes the following:

1. Forced labor or harmful or exploitative forms of child labor
2. Production of, or trade in, any product or activity deemed illegal under national laws or regulations of the country in which the project is located, or under international conventions and agreements, or subject to international phaseouts or bans, such as the following:
   - Production of, or trade in, products containing polychlorinated biphenyl (PCB)
   - Production of, or trade in, pharmaceuticals, pesticides/herbicides, and other hazardous substances subject to international phaseouts or bans (Rotterdam Convention, Stockholm Convention)
   - Production of, or trade in, ozone depleting substances subject to international phaseout (Montreal Protocol)
3. Trade in wildlife or production of, or trade in, wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
4. Transboundary movements of waste prohibited under international law (Basel Convention)
5. Production of, or trade in, weapons and munitions, including paramilitary materials
6. Production of, or trade in, alcoholic beverages, excluding beer and wine
7. Production of, or trade in, tobacco
8. Gambling, casinos, and equivalent enterprises
9. Production of, trade in, or use of unbonded asbestos fibers
10. Activities prohibited by legislation of the country in which the project is located or by international conventions relating to the protection of biodiversity resources or cultural resources, such as the Bonn Convention, Ramsar Convention, World Heritage Convention, and Convention on Biological Diversity
11. Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests
12. Production or trade in wood or other forestry products other than from sustainably managed forests
13. Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats

Source: AIIB (Asian Infrastructure Investment Bank), "Environmental and Social Framework."

Note: Among the above, 2, 3, 4, 10, 11, 12, and 13 concern environment-related exclusion projects.

[28] AFD (Agence Française de Développement), "Exclusion List for AFD Group in Foreign Countries."

[29] Asian Infrastructure and Investment Bank (AIIB), "Environmental and Social Framework 2019" (Beijing: Asia Infrastructure and Investment Bank, March 2019), https://www.aiib.org/en/policies-strategies/_download/environment-framework/Final-ESF-Mar-14-2019-Final-P.pdf.

[30] AIIB, "Environmental and Social Framework 2019."

trade in wood or other forestry products other than from sustainably managed forests; marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats"[29] (see more in Box 4). The German **KfW**, in addition to a "standard" Exclusion List, attaches sectoral guidelines with qualitative conditions—where noncompliance with these conditions leads to project exclusion. For instance, apart from habitat-based rules, the sectoral guideline refers to the international certification systems (Roundtable on Sustainable Palm Oil [RSPO] or Forest Stewardship Council [FSC][31]) or equivalent regulations as a prerequisite compliance for large agricultural or forestry enterprises producing palm oil or wood to receive direct financing commitments from KfW.[32]

Also, a number of private FIs have issued Exclusion Lists. The **Deutsche Bank**, for example, says that since 2016, it no longer finances "directly or indirectly the construction of new coal-fired power plants or new mining projects for the production of steam coal," while **Uni Credit** has committed to exclude coal financing in 2023.[33] **Mitsubishi UFJ Financial Group (MUFG)** "will no longer provide financing to new coal-fired power generation projects"—albeit with exceptions.[34] An ambitious Exclusion List in the private finance sector is provided by **Barclays**, which specifies restrictions on investments, particularly in regard to fossil fuels, promising to not fund greenfield thermal coal mines anywhere in the world. Barclays also restricts support of project finance in the construction or material expansion of coal-fired power stations anywhere in the world.[35] The bank provides detailed screening and Inclusion and Exclusion Lists; for example, excluded projects include the construction of new buildings driven by fossil fuels, projects to improve the energy efficiency of fossil fuel production and/or distribution; and projects/systems where 25 percent or more of electricity transmitted is fossil fuel–generated. Many other commercial banks, such as **HSBC Holdings Plc, JP Morgan Chase, Bank of America,** and **ASN Bank,** have also developed their own Exclusion Lists and policies. ASN Bank also elaborated measures that can be taken to remove items from the Exclusion List.

2.2.1.2 Green List

Some developmental and commercial financial institutions have applied their "Green Project Lists" to encourage green investment abroad. Most green projects focus on climate-friendly initiatives with direct emission reductions, and some lists also include financing projects with indirect and potential climate change mitigation effects. Only a few focus on biodiversity conservation (e.g., ASN Bank).

Several financial institutions, particularly DFIs, have developed lists of eligible projects and use these for climate-aligned overseas financing. Noteworthy is the appendix of the **Common Principles for Climate Mitigation Finance Tracking** issued by the Joint Climate Finance Group of Multilateral Development Banks (MDBs) and the International Development Finance Club (IDFC).[36] It is thus applicable to a wide range of DFIs. The appendix offers a project list spanning over 60 project types in nine categories: renewable energy; lower-carbon and efficient energy generation; energy efficiency; agriculture, forestry, and land use; nonenergy GHG reductions; waste and wastewater; transport; low-carbon technologies; and crosscutting issues. This list is based on the authority and consensus of the multilateral development banks in Green List practice and can be applied across activities and products including green credit, green bonds, green insurance, as well as information disclosure. IFC has expanded this list to include financing projects with indirect mitigation potential, such as mitigation through financial intermediaries and advisory services.[37]

The private financial sector also addresses environmental risks by issuing positive lists for investments. **Barclays**, for example, issued an extensive eligibility list spanning about 60 projects in eight categories in the environmental sector in its Framework for Shared Growth Ambition:[38] energy efficiency; renewable energy; green transport; sustainable food; agriculture and forestry; waste management; GHG emissions reduction not attained through energy efficiency; cross-sector activities. The abovementioned framework by ASN Bank provides ideas about which projects should be included in line with biodiversity protection.

[31] RSPO refers to the Roundtable on Sustainable Palm Oil, and FSC refers to the Forest Stewardship Council.
[32] KfW Development Bank. 2019. "Sustainability Guideline. Assessment of Environmental, Social, and Climate Performance."
[33] Susanna Twidale, et al., "Big European Banks Face Call to End Funding."
[34] MUFG, "MUFG Policies and Guidelines."
[35] Barclays, "Barclays Energy and Climate Change Statement."
[36] Joint Development Finance Club of Multialteral Development Banks (MDBs) and International Development Finance Club (IDFC), "Common Principles for Climate Mitigation Finance Tracking."
[37] IFC, "IFC's Definitions and Metrics for Climate-Related Activities."
[38] Barclays and Sustainalytics, "Barclays: Impact Eligibility Framework for Shared Growth Ambition."

In China, **Industrial and Commercial Bank of China (ICBC)** became the first bank in 2008 to promote green credits to its clients for its domestic business, prior to the establishment of the Chinese green credit system. It also aims to support green BRI development.[39] The lists applied by China's financial institutions for green projects are predominantly government-driven (e.g., green bond catalogue).

2.2.1.3 Evaluation of environmental outcomes

Financial institutions apply a broad and highly sophisticated range of evaluation instruments to gauge environmental impacts for investments in developing countries. Among the most prominent tools are the IFC Environmental and Social Performance Standards, World Bank's Environmental and Social Standards, or the AFD's Carbon Footprinting Tools. Such instruments support financial institutions to evaluate and minimize environmental risk in regard to climate, biodiversity, and pollution. More and more FIs are starting to explore integrating climate impact into their EIAs and demonstrate environmental impact in terms of financial performance.

Financial institutions often apply these tools in lieu of existing government frameworks, as they cannot afford to rely on host country government regulations but apply more rigorous standards to minimize environmental risks and harm. The Equator Principles' signatories, for example, are required to apply IFC Environmental and Social Performance Standards in many investments in emerging economies.

FIs have developed different sets of principles and frameworks to evaluate investments for environmental risks and outcomes. Among the most relevant instruments are IFC's Performance Standards (Box 5) and similar World Bank Environmental and Social Standards (ESS).

For overall environmental impact assessment and management, the **World Bank** ESS 1, for example, on "Assessment and Management of Environmental and Social Risks and Impacts" sets out the borrower's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts associated with each stage of a project supported by the World Bank through Investment Project Financing (IPF).[40] It requires the borrower to conduct ESIAs, implement an Environmental and Social Risk Management (ESRM) system to mitigate, minimize, or compensate for environmental harm.

With particular reference to the management of biodiversity impacts, the **World Bank** ESS 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development, and it recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. ESS 6 addresses sustainable management of primary production and harvesting of living natural resources and recognizes the need to consider the livelihood of project-affected parties, including indigenous peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project. In this regard, it is similar to **IFC's** Performance Standard (PS) 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources, which stipulates that direct and indirect impacts on biodiversity should be minimized through the application of avoidance, minimization, and restoration measures.[41] **The ASN Bank** is an early practitioner of biodiversity impact assessment and conducts comprehensive biodiversity impact assessments on all investments in projects, companies, and loans to ensure these investments contribute to biodiversity conservation.

To increase specificity of environmental (and health and safety) performance in specific industries and sectors, a number of FIs have developed sectoral-specific evaluation and safeguard criteria. The **IFC**, for example, provides over 60 industry-specific Environmental, Health,

Box 5: Overview of International Finance Corporation's Eight Performance Standards

PS1: Assessment and Management of Environmental and Social Risks and Impacts
PS2: Labor and Working Conditions
PS3: Resource Efficiency and Pollution Prevention and Management
PS4: Community Health, Safety, and Security
PS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
PS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
PS8: Cultural Heritage

Source: Internaitonal Finance Corporation, "Environmental and Social Performance Standards."

[39] CDB and UNDP, "Harmonizing Investment and Financing Standards towards Sustainable Development along the Belt and Road."
[40] The World Bank, "The World Bank Environmental and Social Framework."
[41] IFC, "Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources."

and Safety Guidelines (EHS Guidelines) for the agribusiness, chemicals, forestry, general manufacturing, infrastructure, mining, oil and gas, as well as power sectors.[42]

The **IFC** further developed the Anticipated Impact Measurement and Monitoring (AIMM) system. The tool enables FIs to better define, measure, and monitor the development impact of projects. Besides economic and social indicators, the system also considers a range of environmental effects (e.g., water efficiency, biodiversity, adaptation, greenhouse gas emissions).[43]

The classification of investment projects according to their environmental impact is an excellent practice for financial institutions. As discussed in Box 2, **the Equator Principles** require an evaluation of a project's environmental risks in Categories A, B, and C (A being the highest risks). Depending on the outcome of the evaluation of categories, banks apply different risk evaluation and safeguard instruments to manage downside environmental risks of project finance. **The Green Climate Fund (GCF)** also requires an evaluation of project outcomes and accordingly distinguishes three risk levels: C or I3 as lowest-risk activities (e.g., education and training projects); B or I2 with medium-risk activities (e.g., adaptation of crop farming to climate change, forest management activities), and A or I1 with high-risk activities (e.g., large-scale forestry or agricultural projects).[44] Institutions working with the GCF should determine the significance of the risks, depending on outcomes signifying likelihood, frequency, intensity, manageability, duration, and reversibility. Similarly, in China, **the China Development Bank (CDB)** has also applied a review process to sort environmental impacts of projects into four categories according to national and if applicable regional policies: environmentally friendly, compliant, requiring rectification, and high risk.[45] China Eximbank has established a "pro-environment" system with "Four Nos," mostly focused on the client's performance. It also stipulates compliance with local laws and internal regulations.[46]

Under the pressing issue of and commitments to the global response to climate change, FIs are exploring the inclusion of climate impacts in EIAs in terms of the scope and baselines. **The KfW** added an extra dimension of "climate screening" along with the more common environmental screening. Climate screening identifies GHG emissions risks and potentials for reducing GHG and possible climate change impact. This is a practical implementation of the German government's policy on public financing overseas, requiring that projects must comply with and will only be pursued in countries with a national climate mitigation policy and strategy. Moreover, the KfW does not use volume of investment as a cutoff point in screening. The screening considers the project in its entirety, even if KfW is financing only a component of the project. Another example is **the AFD's** Carbon Footprint Tool,[47] which helps determine a project's carbon footprint by first estimating the amount and kind of emissions the project's construction and operations are likely to generate. It then compares the difference between the project's emissions and that of a reference situation; this "baseline" is based on an estimate of the amount and type of emissions that would probably occur if the project were not implemented. The net difference in emissions between the two scenarios determines whether the project is likely to have a positive or negative impact on climate change overall.

Reflecting climate change impacts in quantitative financial terms is explored by some FIs to further incorporate environmental factors into their business decision-making. A number of DFIs (e.g., World Bank, European Bank for Reconstruction and Development **[EBRD]**, European Investment Bank **[EIB]**, and Asian Development Bank **[ADB]**) and FIs (e.g., **Société Générale** since 2011[48]) are calculating a shadow carbon price for their projects to integrate carbon emissions into project cost. The shadow price of carbon is used in lieu of functioning carbon markets and attaches a price to carbon emissions. In other words, these FIs price projects by applying an internal price of carbon (due to the lack of functioning carbon markets) to determine financial viability of projects and encourage low-carbon investment or to deprioritize high-emission projects.[49]

Chinese banks also apply environmental management systems, such as **ICBC's "Green Credit Veto"** mechanism, whereby loans should not be granted to borrowers or projects that do not pass the environmental assessment test to "ensure compliance, integrity, and legitimacy in terms of energy saving and environmental protection."[50]

[42] IFC, "Environmental, Health, and Safety Guidelines."

[43] https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/development+impact/aimm.

[44] GIZ and WRI, "Environmental and Social Safeguards at the Green Climate Fund (GCF)."

[45] CDB and UNDP, "Harmonizing Investment and Financing Standards towards Sustainable Development along the Belt and Road."

[46] The Export-Import Bank of China, "White Paper on Green Finance," states that "If the environmental protection mechanism in the project location is not sound and there is a lack of appropriate EIA/SIA policies and standards, the Bank will refer to Chinese standards or international practices for the review. In practice, the assessment and review department strictly implements the above requirements, making obtaining approval from the environmental protection department of the project location one of the prerequisites and elements for submission for review, and treating environmental risks as an integral part of the risk analysis." No further internal regulations specified.

[47] AFD, "The AFD Carbon Footprint Tool for Projects— User's Guide and Methodology."

[48] Société Générale, "Reducing Our Carbon Footprint."

[49] Fischer et al., "Carbon Pricing and the Multilateral Development Banks." However, not all DFIs' prices are effective.

[50] ICBC, "ICBC Drives Green Growth with Nearly 1,000 Billion Financing." Within the green credit veto system at ICBC, ICBC arranges financing also for coal-fired power plants in the BRI, including agreeing to arrange financing for the Lamu coal-fired power plant in Kenya in 2015 (ICBC, "ICBC Arranges Financing for the Largest Power Plant Project in Eastern Africa."). The Lamu plant's EIA was found insufficient by the local courts in 2019.

2.2.1.4 Differentiated project management

Successful DFIs and commercial FIs apply sound instruments to oversee project implementation and management. They differentiate requirements for environmental management plans and safeguards for projects at different levels of impact, and/or have offered different financing terms (e.g., the Shandong Green Development Fund). They (i.e., Equator Banks) also apply environmental performance–related covenants to enforce sustainable practices by their clients.

Leading DFIs ensure that transparent grievance mechanisms exist for affected stakeholders to flag concerns.

The differentiated management of projects can take two forms. One is to manage and finance projects according to their "category." Practices usually include offering favorable/unfavorable financing terms and adopting differentiated Environmental and Social Management System (ESMS) and safeguard measures during project implementation. The other is to ensure clients' environmental compliance, by using covenants or flexible financing instruments, and through grievance redressal and accountability mechanisms for public participation and oversight.

For the former, FIs often require environmental management plans and safeguards for different classifications of projects. An **"Equator Bank"** asks for continuous implementation of Environmental and Social Management Plans (ESMPs) for projects with a high environmental impact (Categories A and B projects), as well as implementation of stakeholders' participation schemes, the grievance redressal mechanisms, and independent reviews. FIs can also offer differentiated rates to projects of different environmental impact. **Within the Shandong Fund**,[51] the GCF with its co-funders KfW, AFD, and ADB, as well as private and public investors from China, provide differentiated financial terms depending on the project's expected environmental impact—with "transformational projects" with very high environmental benefits receiving below-market financing rates, "advanced benefits projects" receiving market rates, and "good practice projects" (i.e., projects that fulfill the most up-to date environmental standards in China) receiving higher than market rates.[52]

For the latter, FIs can attach different financing terms to enforce compliance by project owners with environmental management plans and safeguards set out in the project evaluation phase. The **Equator Banks** are encouraged to apply covenants (e.g., withholding funds) under Principle 8 (see Box 2), if a client is not in compliance with its environmental and social agreements. Under this principle, banks are encouraged to exercise remedies, including calling an event of default, as considered appropriate if the client fails to reestablish compliance to agreed environmental and social management practices within an agreed grace period. **The Inter-American Development Bank (IADB)**, for example, offers flexible lending instruments ("loans based on results" [LBR]). The LBR is an investment loan that finances the costs of activities associated with the achievement of such results (including safeguard compliance activities) and disburses once these results have been achieved and adequately verified.[53]

Clients' environmental compliance is also ensured through grievance redressal and accountability mechanisms. DFIs such as ADB, AIIB, and many others have established accountability mechanisms, through which people affected by investment projects can raise complaints. **The ADB's** *Accountability Mechanisms,* 2012, for example, enables affected people to report noncompliance with ADB's operational policies and procedures, including safeguard policies, and requests for compliance review by ADB's Compliance Review Panel.[54] Similarly AIIB established its "Policy on the Project-Affected People's Mechanism," in 2018. [55]

Chinese FIs also implement differentiated terms to manage projects. China Eximbank has set up a special department at its head office to provide low-carbon transition support for foreign governments and international institutions. As of November 2019, it had set up a preliminary structure of new energy lending for energy saving and environmental protection.[56] The bank's covenants stipulate overview of project implementation and a credit exit mechanism for projects in gross violation of relevant government regulations and standards and "urge globally operating enterprises to fulfill their green and social responsibility."[57]

[51] A US$1.2 billion fund was set up in 2018.

[52] ADB, "Shandong Green Development Fund Project."

[53] IADB, "Environmental and Social Policy Framework - Draft." Activities that are categorized as Category A (in line with the Equator Principles) due to their potential adverse environmental or social impacts, are not eligible for financing under an LBR.

[54] ADB, "Accountability Mechanism Policy 2012."

[55] Asian Infrastructure and Investment Bank (AIIB), "AIIB's Policy on the Project-Affected People's Mechanisms" (Beijing: Asian Infrastructure Investment Bank, December 7, 2018), https://www.aiib.org/en/policies-strategies/_download/project-affected/PPM-policy.pdf."

[56] China Development Bank and United Nations Development Programme, "Harmonizing Investment and Financing Standards towards Sustainable Development along the Belt and Road."

[57] Export-Import Bank of China, "White Paper on Green Finance - The Export-Import Bank of China."

2.2.1.5 Information disclosure and reporting

The Equator Principles (EP) provides FIs with a widely adopted standard for environmental disclosure at the project level. The EP requires disclosure on GHG emissions from projects emitting more than 100,000 tonnes of CO_2, EIA reports, and third-party verification, among other measures. At the institutional level, successful FIs and DFIs have developed and are applying several sophisticated and standardized frameworks referencing international initiatives such as the Global Reporting Initiative (GRI) and tools provided by think tanks such as the GHG Protocol.

Standardized reporting on carbon intensity, for example, tops FI agendas. Meanwhile, disclosures are also moving toward greater transparency, with increasing emphasis on substantive dialogue with stakeholders and online publication.

FIs and DFIs have strict public reporting practices, driven by government regulation (see Chapter 2.1.1.5) and by self-imposed requirements for transparency.

The Equator Principles provides a widely adopted standard. The **Equator Banks** agree to independently[58] monitor and provide reporting for all projects in all Category A and some Category B projects over the life of the loan. Furthermore, ESIA reports (or summaries thereof) of Category A and appropriate Category B projects must be published online, FIs need to publicly provide annual reports of GHG emission levels of projects larger than 100,000 tonnes CO_2. FIs are also encouraged to share commercially non-sensitive project-specific biodiversity data with the Global Biodiversity Information Facility (GBIF) and relevant national and global data repositories.

At the institutional level, FIs are applying a number of sophisticated and standardized frameworks referencing international initiatives, such as the Global Reporting Initiative (GRI) or the Task Force on Climate-Related Financial Disclosures (TCFD), and using tools provided by think tanks. This ensures a standardization in disclosure and reporting. **Barclays**, for example, published its Environmental, Social, and Corporate Governance (ESG) reporting framework in 2018 to transparently report on its "Shared Growth Ambition." The framework includes metrics on environmental financing (e.g., for water, clean energy, and low-carbon technologies), green loans, green mortgages, and global carbon emissions.[59] For carbon emissions, Barclays employs the Greenhouse Gas Protocol defined by the World Resources Institute and World Business Council for Sustainable Development (WRI and WBCSD).

Reporting on carbon intensity tops FI agendas. To encourage standardized reporting, various DFIs have provided specific standards tools (beyond global standards) for measuring carbon intensity of projects. **The IFC**'s "Definition and Metrics for Climate-Related Activities, 2017,"[60] for example, provides a transparent tool for GHG emissions calculation and reporting. **The AFD** "Carbon Footprinting Tool" for projects (see Chapter 2.2.1.3) also provides an easy-to-use framework to determine a project's carbon footprint and can compare its emissions or emissions savings to an alternative baseline.

Meanwhile, disclosures are also moving toward greater transparency. **EBRD** and **EIB**, in addition to global standards, will disclose on an ongoing basis summary information about bank performance on environmental and social issues, and EBRD will engage in meaningful dialogue with bank stakeholders (e.g., EBRD, Performance Standard [PS] 10), in accordance with the EBRD Public Information Policy (PIP). Based on this policy, the bank releases information annually. EBRD also uploads EIA reports of all investment projects online for 120 days to ensure public supervision.

2.2.2 Best practices across environmental aspects

Project developers, owners, and financial institutions are responsible for adhering to local laws on pollution prevention and control, carbon emissions, and biodiversity protection. In lieu of these laws or where the laws are insufficient to reduce environmental impacts and environmental risks, many financial institutions have developed their own standards, often based on IFC Performance Standards.

2.2.2.1 Environmental pollution prevention and control

In addition to local laws, many financial institutions apply IFC Performance Standard 3 - Resource Efficiency and Pollution Prevention to control pollution. This standard directly applies to environmental pollution related to air, water, and land. Safeguards of development banks including EIB, EBRD, and the World Bank are all based of **IFC's Performance Standard (PS) 3**.

[58] Independent monitoring refers to a third party that is independent of the project owner, the financial institution, and is ideally certified (e.g., see iseal alliance: http://www.isealalliance.org/).

[59] Barclays, "Barclays Environmental, Social, Governance 2018 Reporting Framework" (London: Barclays, 2018), https://home.barclays/content/dam/home-barclays/documents/citizenship/ESG/esg-reporting-framework.pdf."

[60] International Finance Corporation (IFC), "IFC's Definitions and Metrics for Climate-Related Activities."

Performance Standard 3 outlines a project-level approach to resource efficiency and pollution prevention and control in line with internationally disseminated technologies and practices, while ensuring feasibility of the application of these technologies in the local context. The objectives are to avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities; to promote more sustainable use of resources, including energy and water; and to reduce project related GHG emissions.

2.2.2.2 Climate change mitigation

The **IFC Performance Standard 3** - Resource Efficiency and Pollution Prevention also deals with carbon intensity. Banks like Barclays and JP Morgan use this IFC Performance Standard to assess carbon intensity.

The PS requires the client to consider alternatives and implement technically and financially feasible and cost-effective options to reduce project related GHG emissions during the design and operation of the project. These options may include, but are not limited to, alternative project locations; adoption of renewable or low carbon energy sources; sustainable agricultural, forestry, and livestock management practices; reduction of fugitive emissions; and reduction of gas flaring.

Evaluation of outcomes within this scope are also very specific. For example, for projects expected to or currently producing more than 25,000 tonnes of CO_2-equivalent annually, the FI client is required to quantify direct emissions from the facilities owned or controlled within the physical project boundary.

2.2.2.3 Biodiversity conservation

The **IFC Performance Standard 6** (PS6) on Biodiversity Conservation and Sustainable Management of Living Natural Resources is the industry's best practice in reducing biodiversity risks. PS6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development. The requirements set out in this Performance Standard have been guided by the Convention on Biological Diversity (CBD), which are to protect and conserve biodiversity, to maintain the benefits from ecosystem services, and to promote the sustainable management of living natural resources through adoption of practices that integrate conservation needs and development priorities. IFC also applies the mitigation hierarchy,[61] where the top priority is to avoid, the second to minimize, the third to restore, and finally, if all fails, to offset environmental harm.

Other FIs, such as EIB, EBRD, IADB, and the World Bank all use similar standards to IFC's PS6 but have adapted them to their own unique circumstances and settings. The **European Investment Bank (EIB)** for example, has a full section on Biodiversity and Ecosystem in its Environmental and Social Standards,[62] laying out very specific requirements of the applications of the Standard in Natural, Semi-Natural, and Urban Habitats, Standard in Legally Protected Areas or Internationally Recognized Areas for Biodiversity Conservation, Assessments of Risks and Impacts on Biodiversity and Ecosystems, and Mitigation Hierarchy and Biodiversity Management Plan. Similar to the IFC mitigation hierarchy, EIB applies a mitigation strategy that measures biodiversity harm and provides offsets or compensation for any residual significant, adverse impacts that cannot be avoided, minimized, and/or rehabilitated or restored to achieve no net loss or a net gain of biodiversity. Offsets can take the form of positive management interventions at another location, such as restoration of degraded habitat, arrested degradation or averted risk, or protecting areas where there is imminent or projected loss of biodiversity.

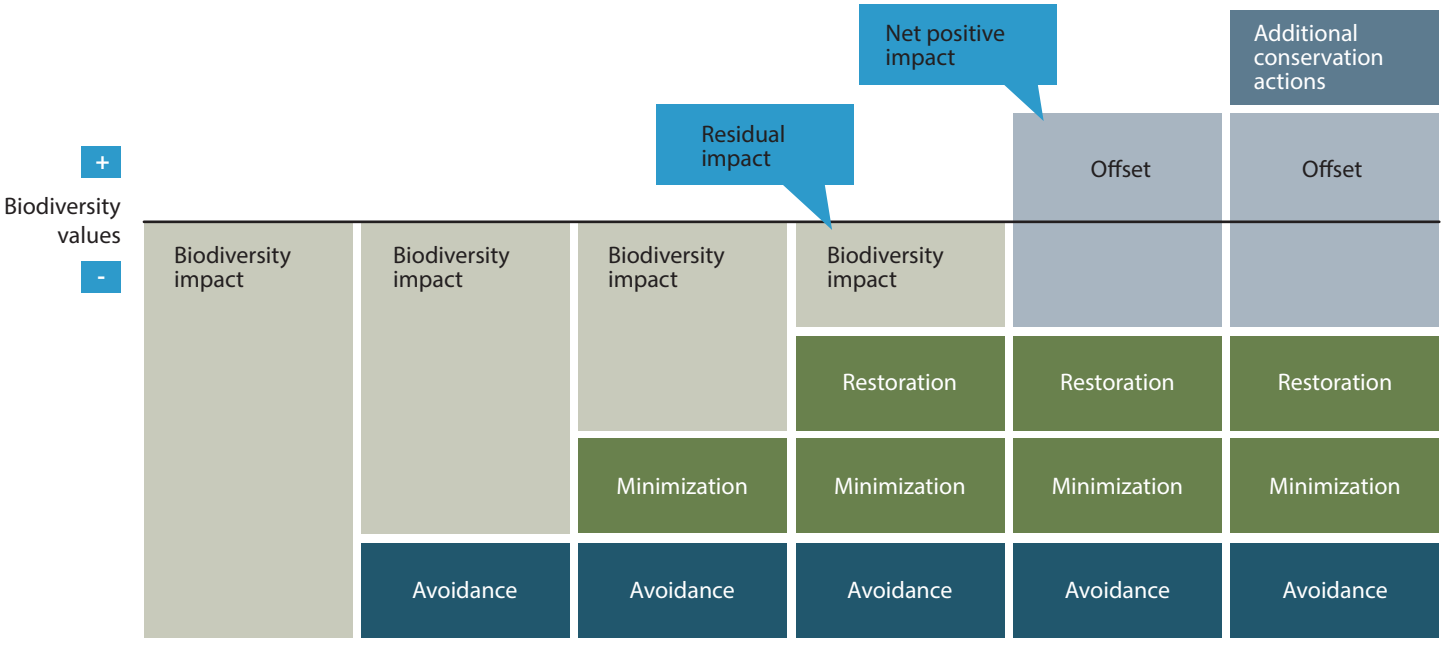
In the private finance sector, the **Equator Principles** and the **IFC standards** are commonly applied. **JP Morgan** includes a section particularly on forest biodiversity in its Environmental and Social Policy Framework.[63] The section highlights the due diligence process and transactions under internally recognized areas, legally protected areas; critical habitats and high conservation value forests need enhanced review and prohibited transactions as part of World Heritage Sites. As mentioned above, **Dutch ASN Bank**'s policy clearly lays out its ambition to be nature-positive with clear biodiversity evaluation criteria that exclude projects that threaten biodiversity and include the ones based on contribution to biodiversity through the project itself or through offsets in line with the biodiversity hierarchy (see Figure 2-2).

[61] The mitigation hierarchy set forth by IFC aims to anticipate and avoid adverse impacts on workers, communities, and the environment, or where avoidance is not possible, to minimize, and where residual impacts remain, compensate/offset risks and impacts, as appropriate. Based off the IFC mitigation hierarchy, most institutions require clients to conduct an environmental and social assessment relating to these risks and impacts and send a mitigation plan with appropriate measures to avoid, minimize, mitigate, offset, or compensate for them.

[62] EIB, "European Investment Bank—Environmental and Social Standards."

[63] JPMorgan Chase & Co, "Environmental and Social Policy Framework" (New York: JPMorgan Chase & Co, 2017), https://www.jpmorganchase.com/corporate/Corporate-Responsibility/document/jpmc-environmental-and-social-policy-framework.pdf."

Figure 2-2: The Biodiversity Mitigation Hierarchy



Source: Power et al. 2012

2.3 NGO and Financial Association Practices

Nongovernmental organizations, nonprofits, and financial associations (henceforth NGOs) have played a wide-ranging and vital role in convening, coordinating, cheerleading, and pressuring financial institutions and corporations into mainstreaming environmental and climate considerations. NGO sustainable investing principles and frameworks have played a catalytic role and set norms in the fields of environmental and social safeguards, environment- and climate-related disclosure, and ESG integration. Signatories to these frameworks typically make a voluntary commitment to environmental sustainability, protecting biodiversity, addressing climate crisis, and demonstrating their social responsibility. Such frameworks also aim to create a cohort of practitioners and bring benefits such as better access to good practices in environmental/climate risk management and innovative green finance products, in addition to reputational gains.

The frameworks gain global authority by assembling teams of scientists, technical experts, and market leaders to develop and promote rigorous and independent standards and by attracting a critical mass of international adopters.

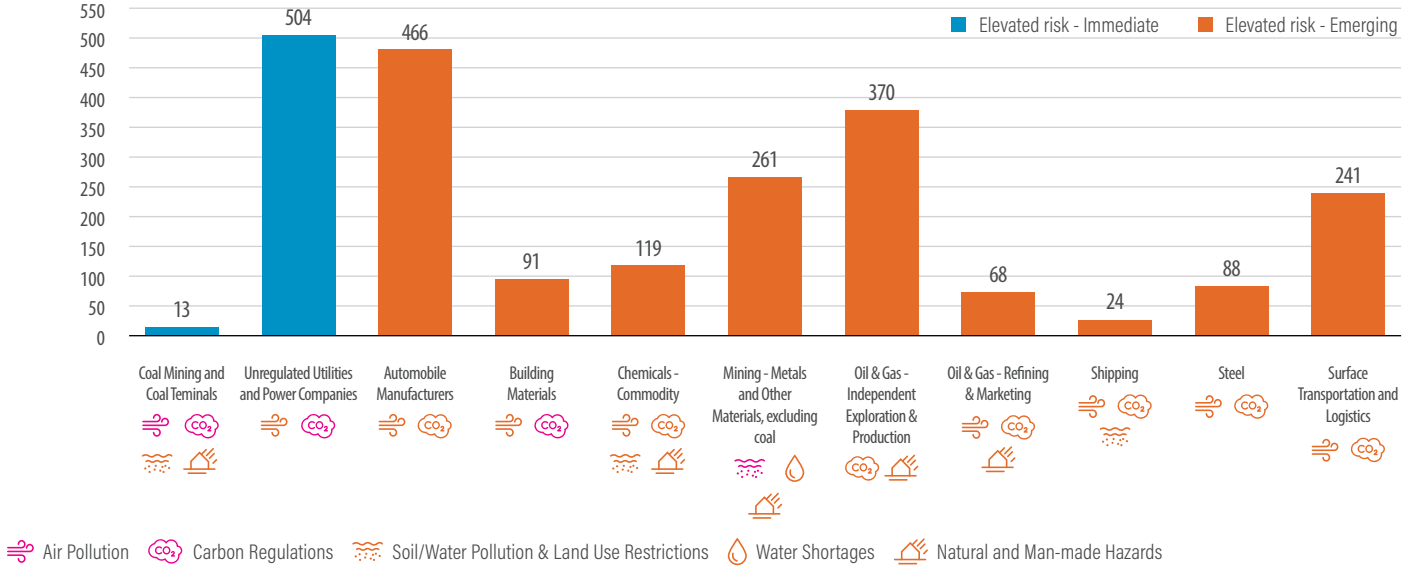
Given the sophistication of today's financial market, an enormous number of new initiatives, standards, norms, and tools of high diversity and heterogeneity are developed by NGOs for investors to better address environmental climate concerns in their investment decisions. Partly they are very high level and principle-based, partly they are very specific. Acknowledging the difficulty of exhaustive lateral comparison, this report presents an analysis of the most relevant tools for the financial sector along the project finance lifecycle. A more detailed mapping is provided in Appendix 2.

2.3.1 Best practices along project finance

2.3.1.1 Exclusion List

NGOs have worked less directly on creating Exclusion Lists that cover environmental impacts of investment activities. However, a growing effort has been dedicated to the development of definitions and metrics of "brown" activities to provide the basis for the development and expansion of Exclusion Lists by governments and financial institutions. "Brown project" identification tools and "brown exposure metrics" are two major contributions from NGOs. Moreover, NGOs, through advocating for green investment principles, promote financial institutions to adopt Exclusion Lists in their overseas investment.

Figure 2-3: Moody's Environmental Risks Global Heatmap



Source: Moody's 2018
Note: $B = US dollars, billions.

While most NGOs have not provided clear and widely applied Exclusion Lists that cover pollution, greenhouse gas emissions, or biodiversity, a growing effort has been dedicated to the development of definitions and metrics of "brown" activities with higher environmental and climate risks on the basis of Green Lists. It provides the groundwork for the development and expansion of Exclusion Lists by governments and financial institutions.

"Brown project" identification tools and "brown exposure metrics" are two major NGO contributions. A number of organizations have developed evaluation tools that clearly highlight brown projects and industries (including the Sustainability Accounting Standards Board **[SASB]** Materiality Map or **Moody's** "Environmental Risks Global Heatmap," see Figure 2-3). Among them, the "Environmental Risks Global Heatmap" assesses and ranks the credit exposure of 84 sectors to environmental risks and identifies 16 industries that are more vulnerable to climate change and carbon emission laws and regulations. It provides basis for further categorization of brown projects and projects to be excluded. These brown project evaluation tools help financial institutions screen their investment decisions for polluting projects. For example, Moody's has adjusted its rating strategy to incorporate ESG considerations including environmental risks.

Since the Network of Central Banks and Supervisors for **Greening the Financial System (NGFS)** has called for the supervisor and/or jurisdiction to agree on definitions and classifications for both "green" and "brown" activities,[64] **a number of NGOs** such as Carbon Disclosure Project (CDP), World Resources Institute (WRI), World Wildlife Fund (WWF), Climate Bonds Initiative (CBI), Carbon Tracker Initiative, and 2° Investing Initiative have been working to develop brown exposure metrics, especially in the climate space. An example is the "**Carbon Tracker Initiative Carbon Cost Curves,**"[65] which analyzes investment projects that would be stranded under various scenarios and thus should not receive investment.

Meanwhile, NGOs also encourages financial institutions to adopt Exclusion Lists in their overseas investment through advocating green investment principles. For example, the definition of sustainable investment by **Global Sustainable Investment Alliance (GSIA)** has emerged as a global standard of classification and tracking. It proposed "the exclusion from a fund or plan of certain sectors or companies involved in activities deemed unacceptable or controversial" (see Table 2-2).

[64] Network for Greening the Financial System (NGFS), "A Call for Action - Climate Change as a Source of Financial Risks" (Paris: Network for Greening the Financial System, April 2019), https://www.banque-france.fr/sites/default/files/media/2019/04/17/ngfs_first_comprehensive_report_-_17042019_0.pdf."

[65] Carbon Tracker Initiative, "Carbon Supply Cost Curves: Evaluating Financial Risk to Oil Capital Expenditures" (London: Carbon Tracker Initiative, May 2014), https://carbontracker.org/reports/carbon-supply-cost-curves-evaluating-financial-risk-to-oil-capital-expenditures/."

Table 2-2: Global Sustainable Investment Alliance's Approach to Sustainable Investment Tracking

Positive/best-in-class screening	Investment in sectors, companies, or projects selected for positive ESG performance, relative to industry peers. This includes avoiding companies that do not meet certain ESG performance thresholds.
Negative/exclusionary screening	Exclusion from a fund or plan of certain sectors or companies involved in activities deemed unacceptable or controversial.
ESG integration	Systematic and explicit inclusion by investment managers of ESG factors into financial analysis.
Impact investing	Targeted investments aimed at solving social or environmental problems.
Sustainability themed investing	Selection of assets specifically related to sustainability in single- or multi-themed funds.

Source: Global Sustainable Investment Alliance[66]
Note: ESG = Environmental, Social, and Corporate Governance.

2.3.1.2 Green List

NGOs have provided sector-specific inclusion tools and definitions for "green projects." In practice, a "green" or "sustainable" taxonomy typically provides a list of eligible projects or assets, with thresholds and metrics as necessary. At the same time, NGOs are also developing a series of investment evaluation tools to guide investors to identify green projects and assets—these tools come with a broader set of requirements for investors, such as certification for process, post-issuance requirements, and reporting. Such tools also provide green "standards" for the subjects of investments. In addition, to enhance transparency and ensure market integrity already in the project initiation phase, it has become a best practice for asset owners to bring in outside parties to conduct external evaluations of the green eligibility criteria and the allocation of raised capital ("use-of-proceeds").

Evaluation of green investment has long been a key for investors to accelerate actions against climate change and reduce exposure to environmental risks. NGOs have developed a number of tools to specify green projects for inclusion, contributing to establishing Green Lists.

Definition of existing "green projects" can be developed based on a preset activity list (e.g., projects of sustainable energy, energy efficiency, water management, etc.), or a list based on single or a combination of metrics, including carbon intensity, energy efficiency, waste management, climate impact assessment, etc. Different organizations adopt different methodologies and granularity in identifying green projects: for example, the "**Green Bond Principles (The GBP)**" issued by the International Capital Market Association (The ICMA), as the industry's most popular set of voluntary best practice guidelines do not exclude issuer self-labeled green bonds from funding nuclear or fossil fuel–related projects. Whereas the more detailed "**Climate Bonds Standards (The CBS)**" exclude almost all fossil fuel investments (see Table 2-3 for a comparison of different green evaluation and certification schemes).

In practice, a "green" or "sustainable" taxonomy typically provides a list of eligible projects or assets, with thresholds and metrics as necessary. The **Green Loan Principles (The GLP)** developed by ICMA states that green loans and bonds should support the financing of the following activities: renewable energy, green building, pollution prevention and control, circular economy, clean transport, energy efficiency, climate change mitigation and adaptation, sustainable water management, sustainable agriculture and husbandry, biodiversity, waste management, and other similar categories of sustainability and conservation. **CBS** and its certification mechanism provide for sector-specific requirements for categories of certifiable assets and set out technical standards and relevant thresholds.

NGOs are also developing a series of tools to guide investors to identify green projects and green assets[67] to be able to establish

[66] Global Sustainable Investment Alliance (GSIA), "2018 Global Sustainable Investment Review" (Global Sustainable Investment Alliance, 2019), http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf."

[67] The green/brown classification criteria can be applied to a wide range of financial assets and instruments. While most widely applied to debt instruments (bonds, loans, asset-backed securities, etc.), the taxonomy can go beyond the asset and project level and be used to assess the green/brown level of a specific portfolio, company, or financial institution. However, not all sustainable investment instruments are suitable for assessment based on taxonomies. For example, most sustainability loans are linked to overall key performance indicators or Environmental, Social, and Corporate Governance (ESG) indicators of portfolio companies, rather than to specific green projects.

Green Lists. Best practices in this regard usually includes requirements for evaluation and screening processes for green projects, use and management of funds, and external review and information disclosure and reporting. As an example, **the CBS** 2010 of Climate Bonds Initiative (The CBI) provides green definitions that are sector specific. It includes a certification scheme including process, pre-issuance and post-issuance requirements, and a suite of sector-specific eligibility criteria. It has now become one of the most widely applied tools by green bond issuers and investors in determining whether financing is climate friendly and meets eligibility criteria.

To enhance transparency and ensure market integrity in the project initiation phase, it is best practice for asset owners to bring in outside parties to conduct external evaluations of the green eligibility criteria and the allocation of raised capital ("use-of-proceeds"). The external review market can be divided into four types of organizations: second-party opinions (SPO) providers,[68] third-party verification providers that offer service based on national regulations or a global certification scheme,[69] auditing firms providing "assurance" services, and credit rating agencies providing green evaluations based on metrics and weightings.[70]

In particular, SPOs provide independent environmental quality checks targeted at environmental aspects and the selection process of a project, regardless of the economic nature and the investment outcome of the project. Providers of SPOs usually take reference from the definition of green use of proceeds, whereas auditing firms such as **Deloitte** and **Ernst & Young (EY)** carry out review of relevant assets and projects based on disclosed frameworks (Table 2-3). Headquartered in Norway, research institute **Cicero** is the world's only team specialized in providing green evaluation methods. Under its criteria, "dark green" refers to those that meet the long-term vision of a low-carbon and climate-resilient world, while "light green" refers to projects that can achieve short-term reduction in greenhouse gas emission but may lead to carbon lock-in within their lifecycle.

Table 2-3: Comparison of Leading Green Evaluation and Certification Schemes

	Climate Bonds Standards and Certification, 2019	Green Bond Principles (ICMA), 2019	CICERO Second Opinions	Moody's Green Bond Assessment	S&P's Green Evaluations	Chinese Green Bond Endorsed Project Catalogue, 2015
Use of proceeds must be tied to green investment	Yes	Yes	Yes	Yes	Yes	Yes
Sector-specific criteria with benchmarks	Yes				Yes	Yes
Ex-post monitoring and assessment	Yes			Yes		
"Shades of green" assessment			Yes	Yes	Yes	Yes
Qualitative weightings				Yes	Yes	

Source: Authors.

[68] Usually specialized environmental research institutions such as Vigeo-Eiris, Sustainalytics, ISS-oekom, and CICERO.

[69] For instance, the DNV-GL, Bureau Veritas, CECEP Consulting, etc.

[70] Moody's, S&P Global Ratings.

2.3.1.3 Evaluation of environmental outcomes

In terms of quantifying GHG emissions, biodiversity considerations evaluation, and linking environmental impacts and financial impacts, NGOs have developed a series of standardized and practical tools including Greenhouse Gas Protocol, biodiversity footprinting and mapping, monetary tools, and integrated accounting for biodiversity protection, etc. There are also tools that help to evaluate environmental impacts on financial status and operations of corporates in different sectors, benefiting corporates and financial institutions by enhancing understanding of environmental impacts of their investment activities, hence making more green investment decisions. The tools are widely adopted by financial institutions.

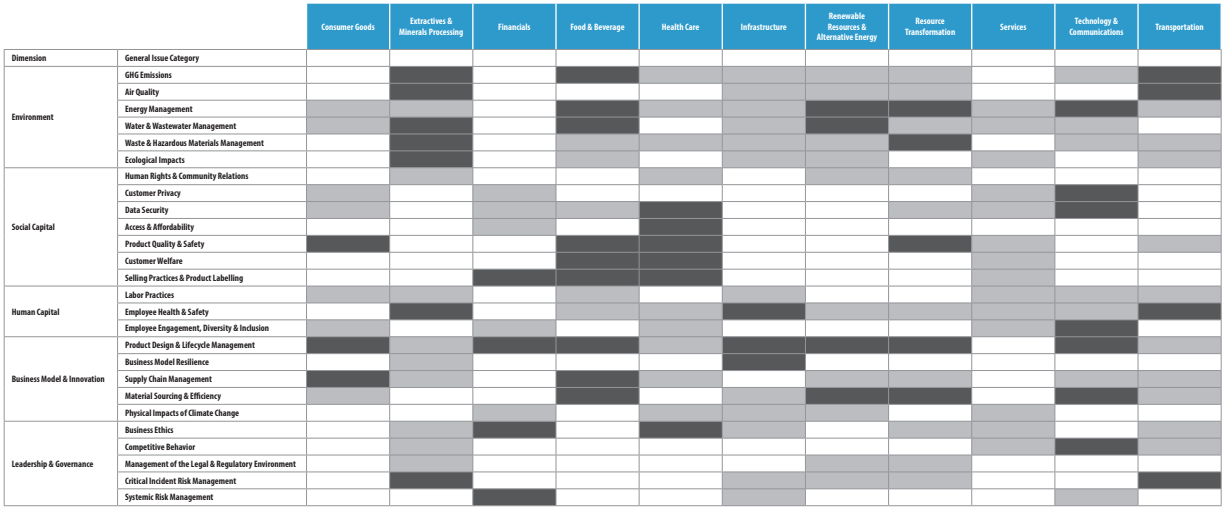
As early as in 1991, the **International Chamber of Commerce (The ICC)** drew up the Business Charter for Sustainable Development. It required its several thousand signatories to apply home country environmental requirements when they invested internationally.[71] The standards have been updated in 2000 and 2015 to reflect current developments such as SDGs and biodiversity alignment and consist of eight principles.[72]

NGO's efforts to support companies in assessing environmental and climate impacts through quantifying GHG emissions have been recognized by global institutional investors. The "Greenhouse Gas Protocol," 2002, developed by World Resources Institute/World Business Council for Sustainable Development **(WRI/WBCSD)**,[73] establishes a comprehensive global standardized framework for corporations to measure and manage GHG emissions from private and public sector operations, value chains, and mitigation actions. It is widely adopted by financial and government institutions. A similar tool is the **CDP**," 2002, which works with corporations and investors to ensure environmental reporting and risk management as business norms by providing frameworks, data, and guidance to the corporations.

To facilitate biodiversity considerations and the application of relevant finance instruments, **World Wildlife Fund (WWF)** produced an overview report[74] in 2019 on natural capital assessment tools. The report aims to provide a broad, representative, and up-to-date overview of the tools available to economic actors. It covers factors from biodiversity footprinting to mapping, from monetary tools for biodiversity protection to integrated accounting.

NGOs are also working to connect environmental and financial impacts. For example, the **SASB**'s Materiality Map (Figure 2-4) identifies sustainability issues that are likely to affect the financial conditions or operating performance of companies covering 77 different industries. In the Materiality Map, SASB identifies 26 sustainability-related business issues that encompass a range of Disclosure Topics and their associated Accounting Metrics.[75]

Figure 2-4: Sustainability Accounting Standards Board Materiality Map



Note: GHG = Greenhouse gas.
Source: SASB 2020.

[71] Burger et al., "Making FDI Work for Sustainable Development."

[72] ICC, "Business Charter for Sustainable Developmen—Business Contributions to the UN Sustainable Development Goals."

[73] World Business Council for Sustainable Development and World Resources Institute, eds., *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard,* Rev. ed (Geneva, Switzerland and Washington, DC: World Business Council for Sustainable Development ; World Resources Institute, 2004).

[74] WWF, *Natural Capital and Organization Strategies: An Overview of Available Tools.*

[75] Sustainability Accounting Standards Board (SASB), "SASB Materiality Map," Sustainability Accounting Standards Board (SASB), accessed March 4, 2020, https://materiality.sasb.org/.

2.3.1.4 Differentiated project management

NGOs are providing broadly agreed principles of sustainable investments for governments, companies, and investors, such as the newly released Green Investment Principles for the Belt and Road (GIP). Regarding the classification of projects according to their environmental impact, some NGOs, on the one hand, are pushing for ESG investment principles that guide FIs and companies to turn brown investments green, and ensure that the transition is reflected in a company's culture, policies, and investment decisions. On the other hand, seeking to address grey areas that lie outside clearly demarcated "green" and "brown" investment activities, some NGOs have teamed up with industry leaders to explore the potential to facilitate the "brown-to-green" transition in high-polluting and high-emitting sectors.

Applying differentiated management to projects depending on their environmental impact is an essential part of "green investment principles" and "transition investment" advocated by NGOs.

NGOs are pushing for green investment principles that guide FIs and companies to turn brown investments green and ensure that the transition is reflected in the company's culture, policies, and investment decisions. One aspect of the differentiated management approach is to incorporate ESG issues into investment analysis and decision-making. The "**UN Principles for Responsible Investment (PRI)**," 2006, is one of such corporate responsibility tools (focusing on the aggregate portfolio). With almost 3,400 signatories as of September 2020, the PRI investigates areas including strategies, policies, and capacity-building, as well as portfolio, planning decisions, and asset allocation.

Some NGOs have teamed up with industry leaders to explore the potential to facilitate the "brown-to-green" transition in the high-polluting and high-emitting sectors. Outside the clearly demarcated "green" and "brown" investment activities, there are many grey areas where clear evaluation frameworks are not yet available. In recent years, an increasing number of institutions have realized that in response to the climate crisis, the financial sector also needs clearer guidelines and pathways to support the green transition of activities whose environmental risks and contributions have not been clearly classified. For example, **CBI-United Bank of Switzerland** is to launch a consulting service for the labeling of "transition bonds," which will allow companies from high-emission sectors such as steel, cement, aviation, and oil and gas to issue labeled financing products as long as issuers have solid low-carbon transition strategies.

Meanwhile, NGOs are also pushing for investment principle frameworks to incorporate green investment in broad strategies and businesses, thus building a foundation for differentiated management of projects with varying environmental impacts. A new initiative, the "**Green Investment Principles for the Belt and Road (The GIP)**" has an explicit mandate to ensure that environmental friendliness, climate resilience, and social inclusiveness are built into new investment projects in Belt and Road countries. Driven by a stakeholder coalition from China and the United Kingdom, the GIP is a set of voluntary principles dedicated to incorporating low-carbon and sustainable development practices (Box 6). Its 37 signatories[76] include major Chinese and non-Chinese financial institutions that lend to projects in the Belt and Road region. It was developed with reference (but without mandatory application) to other guiding principles such as Equator Principles, PRI, and IFC Performance Standards. GIP encourages signatories to integrate sustainability and Environmental, Social, and Corporate Governance (ESG) factors into the company's strategy and management system and adopt a top-down approach to promote these factors; to communicate environmental and social risks with stakeholders at the business level, through measures including environmental risk analysis, information-sharing, and conflict resolution mechanisms; to adopt advanced green financial instruments and green supply chain practices, and to build capability through active cooperation and knowledge-sharing.

Box 6: Seven Green Investment Principles for the Belt and Road

1. Embedding sustainability into corporate governance
2. Understanding Environmental, Social, and Corporate Governance risks
3. Disclosing environmental information
4. Enhancing communication with stakeholders
5. Utilizing green financial instruments
6. Adopting green supply chain management
7. Building capacity through collective action

Source: Green Investment Principles, "About GIP."

[76] As of September 2020.

2.3.1.5 Information disclosure and reporting

NGOs have provided a multitude of best practices for integrated reporting and environmental performance reporting. Among the most relevant are the Global Reporting Initiative (GRI) and the Task Force on Climate-Related Financial Disclosures (TCFD). Particularly, the GRI is a broadly applicable reporting framework that covers a spectrum of sustainability topics and is widely applied.

Environment and climate-related accounting and disclosure standards and tools are an important part of the management of climate and environmental risks and the transition to a low-carbon economy for enterprises and financial institutions.

Investors around the world have complained for years that they need high-quality and up-to-date ESG data to make decisions about the impact of environmental and climate risks on their businesses and future investments. However, in most emerging markets, this information is often inaccurate or nonexistent, resulting in a large lack of data for investors to fully assess risks associated with their investment environment.

NGOs can play an important role in setting global standards for reporting due to their independence, sector knowledge, and global reach. Accordingly, a variety of NGOs and associations have issued standards and guidelines for public reporting of green performance of investments. The "**Global Reporting Initiative (The GRI)**," 1997, uses an international independent standards organization that helps businesses, governments, and other organizations understand and communicate their impacts on issues such as climate change, human rights, and corruption. The GRI provides a tool for third parties to assess environmental impacts from corporate activities and its supply chain. Its performance indicators include criteria on energy, biodiversity, and emissions.

NGOs and industry associations have also teamed up to develop environmental information reporting and disclosure tools for FIs and investors. For example, the private sector-led **Task Force on Climate-Related Financial Disclosures (TCFD)**, 2015, was initiated by the Financial Stability Board (FSB), a monitoring body for global financial stability. It provides a voluntary framework for climate-related financial risk disclosures for companies to inform investors and other members of the public about "the physical, liability, and transition risks associated with climate change and what constitutes effective financial disclosures across industries."[77] It suggests reporting on the four core elements of metrics and targets, risk management, strategy, and governance. As of February 2020, over 1,000 organizations, representing a market capitalization of over $12 trillion support the TCFD. A number of TFCD-aligned reporting frameworks and tools have flourished, such as the **SASB** Sustainability Accounting Standards (SASB Standards) and the **CDSB** Framework for Reporting Environmental Information and Natural Capital (the CDSB Framework). The **GRI** and **CDP** are other examples of NGOs working with corporations and investors to ensure environmental reporting and risk management as business norms, by providing frameworks, data, and guidance.

While reporting on climate performance and pollution is the most advanced area, there is growing attention and effort from NGOs to explore reporting on biodiversity issues. Among them, the **Task-force for Nature-Related Financial Disclosures (TNFD)** was established in September 2020 and supported by a number of financial institutions and governments,[78] in identifying nature-related risks and dependencies that materially affect their portfolios, a framework applicable to further disclosure on biodiversity.

2.3.2 Best NGO practices across environmental aspects

2.3.2.1 Environmental pollution and climate change mitigation

NGOs have developed best practice **tools, platforms, and databases** in key sectors such as climate (e.g., CDP company disclosure tracker), infrastructure (e.g., Envision rating system, SuRe Standard for Sustainable and Resilient Infrastructure[79]), energy (e.g., International Renewable Energy Agency (IRENA) Sustainable Energy Marketplace, Hydropower Sustainability Assessment Protocol, water (e.g., WWF Water risk filter, WRI Aqueduct atlas), agriculture (e.g., FAOSTAT, Climate Bonds Agriculture Criteria), transportation and industry.

New platforms such as **Resource Watch**, developed by WRI together with over 30 partners, offer examples of how nonprofits are

[77] UNEP Finance Initiative, "Changing Course - A Comprehensive Investor Guide to Scenario-Based Methods for Climate Risk Assessment, in Response to the TCFD" (New York: UNEP Finance Initiative, May 2019), https://www.unepfi.org/wordpress/wp-content/uploads/2019/05/TCFD-Changing-Course-Oct-19.pdf.

[78] Established by a coalition of partners including Global Canopy, UNDP, UNEP Finance Initiative, and WWF. It is supported by financial institutions like AXA, BNP Paribas, DBS Bank, Rabobank, First Rand, Yes Bank, Storebrand, as well as the governments of the United Kingdom, France, the Netherlands, and Switzerland.

[79] SuRe, "SuRe® | The Standard for Sustainable and Resilient Infrastructure," 2015, https://sure-standard.org/.

increasingly using data analytics and index/geo-based visualization tools to make visible the potential environmental impact, ecological implication, or climate risk exposure of a certain project when making investment decisions.

Apart from providing environmental and climate impact metrics for investment decisions at the early stages, standards and methodologies developed by NGOs are widely used to support continuous assessment and reporting of environmental impacts on investment activities. For example, to report on GHG emissions, the "**Greenhouse Gas Protocol**," 2002, developed by World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD), establishes a comprehensive global standardized frameworks for corporations to measure and manage GHG emissions from private and public sector operations, value chains, and mitigation actions. A similar tool is the "**Carbon Disclosure Project (CDP)**," 2002.

2.3.2.2 Biodiversity

The "**Global Standard for the Identification of Key Biodiversity Areas (KBAs)**" (IUCN 2016)[80] sets out globally agreed criteria for the identification of KBAs worldwide. The KBA Standard establishes a consultative, science-based process for KBA identification, founded on the consistent application of global criteria with quantitative thresholds developed through an extensive consultation exercise spanning several years. Sites qualify as global KBAs if they meet one or more of 11 criteria within five categories: threatened biodiversity, geographically restricted biodiversity, ecological integrity, biological processes, and irreplaceability. Similarly, the "**Living Planet Report**," WWF's flagship biennial publication, and the "**Living Planet Index (LPI)**,"[81] of the **Zoological Society of London (ZSL)** are examples of comprehensive studies reporting trends in global biodiversity and the health of the planet that also include specific indicators to measure biodiversity.

A series of global guidelines for protected area practitioners were jointly produced by the International Union for Conservation of Nature **(IUCN) World Commission on Protected Areas** and have been widely applied by a variety of financial institutions (e.g., IFC and World Bank) to avoid investments in these areas or in line with the guidelines. They include the "Guidelines for Privately Protected Areas (2018),"[82] "Tools for Measuring, Modelling, and Valuing Ecosystem Services (2018),"[83] "Wilderness Protected Areas: Management Guidelines for IUCN Category 1b Protected Areas (2016),"[84] and "Urban Protected Areas (2015)."[85] To facilitate biodiversity considerations and the application of relevant finance instruments, WWF produced an overview report[86] in 2019 on natural capital assessment tools. The report provides a broad, representative, and up-to-date overview of the tools available to economic actors. It covers factors from biodiversity footprinting to mapping, from monetary tools for biodiversity protection to integrated accounting. Another important contribution of NGOs is providing biodiversity monitoring data to support and monitor investment activities.

The **World Database on Protected Areas (WDPA)** is the most comprehensive global database on terrestrial and marine protected areas. It is a joint project between the United Nations Environment Programme (UNEP) and IUCN, managed by **UNEP World Conservation Monitoring Centre (UNEP-WCMC)**. Similarly, WWF together with several partners jointly provide the "**WWF-SIGHT**,"[87] a global intelligence platform of environmental assets including UNESCO World Heritage Sites; Protected Areas; Key Biodiversity Areas; Elephant, Chimpanzee, Lion Habitats; Forest Cover; and Ecological and Biologically Significant Marine Areas. This technology allows users to bring together diverse spatial datasets and combine them with satellite imagery to provide a near real-time, high-level understanding on the current status of conservation assets around the globe.[88]

[80] IUCN, A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0, first edition (Gland: IUCN, 2016), https://portals.iucn.org/library/sites/library/files/documents/2016-048.pdf.

[81] The LPI is one of a suite of global indicators used to monitor progress toward the Aichi Targets of the Convention on Biological Diversity, agreed by the Convention on Biological Diversity (CBD) in 2010. WWF and ZSL - Zoological Society of London, "Living Planet Report 2018 - Technical Supplement: Living Planet Index" (Gland: WWF, 2018), http://awsassets.panda.org/downloads/lpr2018_technical_supplement_for_lpi.pdf."

[82] Brent Mitchell et al., *Guidelines for Privately Protected Areas,* ed. Craig Groves, 1st ed. (IUCN, International Union for Conservation of Nature, 2018), https://doi.org/10.2305/IUCN.CH.2018.PAG.29.en.

[83] Neugarten et al., "Tools for Measuring, Modelling, and Valuing Ecosystem Services."

[84] Locke et al., "Wilderness Protected Areas."

[85] Trzyna et al., "Urban Protected Areas: Profiles and Best Practice Guidelines."

[86] WWF, *Natural Capital and Organization Strategies: An Overview of Available Tools.*

[87] WWF, "WWF Sight."

[88] Similar tools also include IUCN IBAT and WRI's Global Forest Watch, which are ways to facilitate the release and reporting on the biodiversity resources and assets.

CHAPTER 3.

ESTABLISH THE BRI PROJECT CLASSIFICATION SYSTEM

The mapping of best practices highlights that classifying projects according to their environmental impact is an important measure in shifting overseas investment from brown to green. Project classification provides a foundation for and is closely linked to other measures. The best practices analysis in Chapter 2 spotlights some examples of applying the classification approach, such as the Equator Principles' differentiation of A, B, C type projects, depending on their environmental risks; the EU Taxonomy's guidance on significant contribution and "Do No Significant Harm" evaluation; and the IFC Performance Standards stipulation that if there is a more environmentally friendly technology available to reach a stated goal, this technology should be applied. In China, the China Banking and Insurance Regulatory Commission (CBIRC) Green Credit Statistics System encourages banks to classify and differentiate projects. NDRC Guidelines on Further Guiding and Regulating Overseas Investment, 2017, adopted a classification of "encouraged, restricted, and prohibited" projects though the environmental factors are so far not featured in the considerations.

This study therefore proposes a methodology for classifying projects based on three main environmental objectives: pollution prevention, climate change mitigation, and biodiversity conservation. The classification provides a framework for environmental impact assessment and management of investment projects.

3.1 Categories of Projects

Three different levels of environmental impact emerge: Green (positive), Yellow (neutral), and Red (negative). Specifically, these are defined as follows:

Red Projects – Projects requiring stricter supervision and regulation (the negative list)

Projects in this category have risks of significant and irreversible environmental harm in at least one environmental aspect (climate, pollution, biodiversity). The environmental harm can only be recovered through long-term efforts and at huge cost.

Yellow Projects – Projects with moderate impact

Projects in this category "Do No Significant Harm" (DNSH) to any environmental aspect, and any residual environmental harm can be mitigated by the project itself through affordable and effective measures within reasonable boundaries.

Green Projects – Encouraged projects (the positive list)

Projects in this "category have no significant negative impact on any environmental aspect, and positively contribute to at least one environmental aspect, particularly if they support the achievement of international environmental agreements and conventions.

Projects can improve their impact categorization depending on the project type and project-specific environmental management measures to mitigate the environmental harm or even contribute to at least one environmental dimension, to become red/green or red/yellow. This allows for flexible project categorization, with evaluation of projects, considering local circumstances and needs in different BRI countries.

The report defines the following terms in classifying projects.

Pollution is defined in accordance with the United Nations 2019 resolution that includes air, water, land/soil, marine and coastal pollution, and the crosscutting issues of chemicals and waste.[89] It is caused by the introduction of harmful materials into the environment.[90] Air pollution, for example, is understood in line with the World Health Organization (WHO), which sees that particulate matter (PM), ozone (O_3), nitrogen dioxide (NO_2), and sulphur dioxide (SO_2) contribute to pollution with adverse health effects.[91]

Climate change shall be defined in accordance with the United Nations Framework Convention on Climate Change (UNFCCC) and Intergovernmental Panel on Climate Change (IPCC) frameworks, where by 2017, human activities are estimated to have caused approximately 1.0 degrees Celsius of global warming above preindustrial levels through economic activity that produces various GHG gases.[92] GHG emissions are risking further global temperature increases with negative impacts for livelihoods, the environment, and ecosystems. Seven greenhouse gases are covered by UNFCCC currently—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

Biodiversity shall be defined in accordance with the Convention on Biological Diversity (CBD). Accordingly, biodiversity means the

[89] United Nations Environment Assembly of the United Nations Environment Programme, "Implementation Plan 'Towards a Pollution-Free Planet.'"
[90] National Geographic Society, "Pollution."
[91] WHO, "WHO | Ambient Air Pollution: Pollutants."
[92] IPCC, "Summary for Policymakers"; and "Glossary of Terms."

variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are a part.[93] The CBD focuses on the three core objectives: (1) conservation of biological diversity, (2) sustainable use of its components, and (3) fair and equitable sharing of benefits arising out of the use of genetic resources,[94] which were formalized through the Aichi Targets of the Convention on Biological Diversity and are negotiated in the Post-2020 Global Biodiversity Framework. Accordingly, "conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources"[95] are fundamental to BRI investments.

Significant negative environmental risk potential means a large-scale alteration in environmental conditions—one that imposes permanent, or nearly permanent, changes in those conditions. Significance encompasses the following dimensions:[96]

- Extend and spread magnitude of the impact; for example, does the project have a direct spatial impact on more than the micro-environment directly surrounding the project, or indirect impact through transfer to associated projects and activities, such as up- and down-stream activities?
- Duration; for example, are the project's consequences to the environment during all project phases (construction, operation, decommissioning) reversible within a reasonable time?
- Sensitivity of the affected area; for example, does the project encroach a protected or non-fragmented area, and/or can the affected habitat be fully reconstituted or sustainably moved elsewhere?
- Manageability; for example, will affordable and effective measures avoid or mitigate potential impacts?
- Accidents; for example, does the project have a high risk of environmental consequences no matter the risk of occurrence, for example, through breakwater, explosion, etc.?

Irreversible means the risk of permanent destruction of wildlife, risk of extinction of species, or risk of permanently altering a pristine environment, particularly when restoration to the status quo is impossible or at best extremely difficult, at least on a relevant timescale.[97] While the concept of "irreversibility is difficult to operationalize,"[98] the Precautionary Principle adopted in 1992 by the United Nations shall apply: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[99]

The Project Classification method considers the following factors:

1. Provides an evaluation matrix of projects in regard to their potential positive environmental impact in any of the three environmental dimensions of pollution, GHG emissions, and biodiversity;
2. Provides an evaluation of their potential risks of negative environmental impact in any of the three environmental dimensions of pollution, GHG emissions, and biodiversity;
3. Provides pathways for mitigation and adaptation of negative environmental impacts, which allows projects to upgrade to a better category;
4. Borrows from Chinese and international best practices, including the updated Chinese Green Bond Catalogue, the Green Industry Catalogue, the Green Bond Guidelines, the SDG Finance Taxonomy (China), and other internationally recognized green finance standards.

It is important to acknowledge that the classification proposed in this report focuses only on environmental aspects associated with the projects and does not make judgments on the financial viability of a project or the social aspects. The classification must be used in line with other risk evaluation and risk management tools summarized here and with the nine recommendations in Chapter 5 (such as the application of environmental impact assessments, information disclosure, public participation, etc.).

3.2 Project Classification Process

The classification process considers two major factors regarding environmental risks: the evaluation of positive contribution and possible negative environmental impacts, as well as the availability

[93] Convention on Biological Diversity, "Convention Text," Convention on Biological Diversity (Secretariat of the Convention on Biological Diversity, November 2, 2006), https://www.cbd.int/convention/articles/?a=cbd-02.

[94] Brooks et al., *Best Policy Guidance for the Integration of Biodiversity and Ecosystem Services in Standards.*

[95] IFC, "Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources."

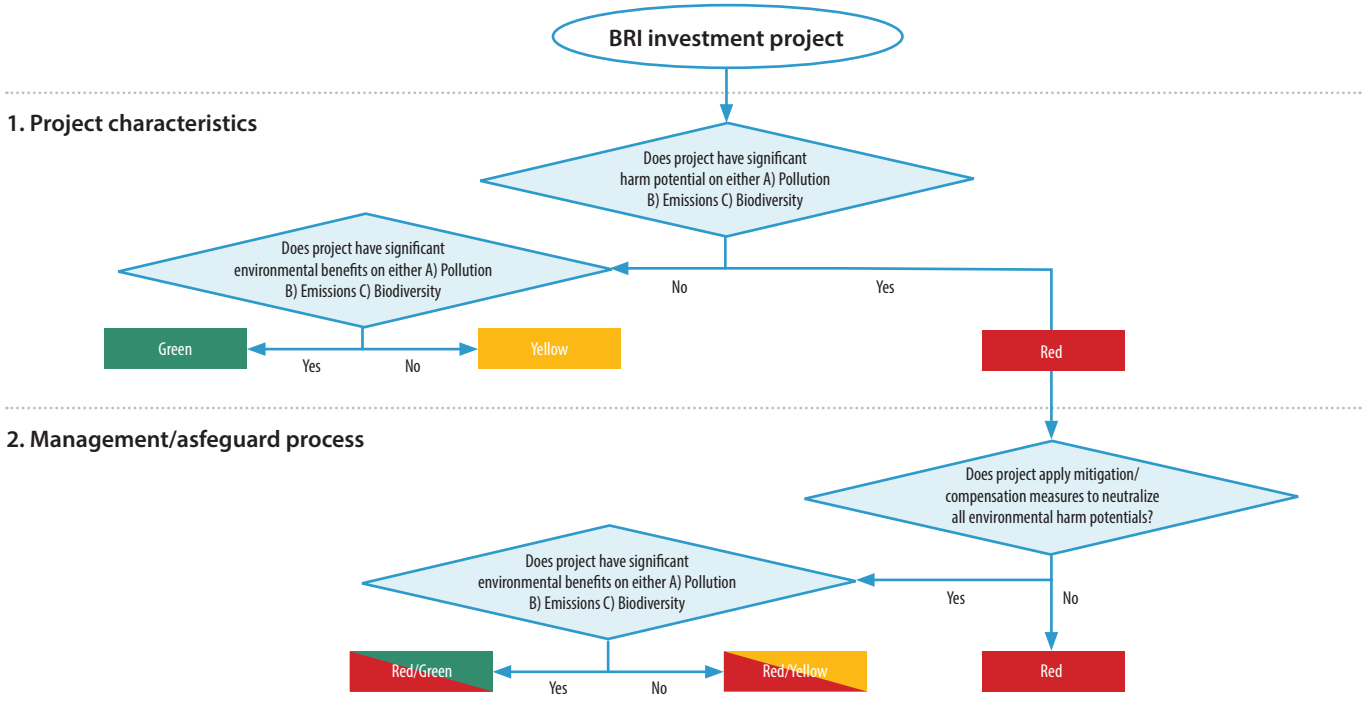
[96] Based on study of various Environmental and Social Risk Management (ESRM) frameworks of financial institutions as well as UNDP, "Social and Environmental Screening Procedure."

[97] Cass Sunstein, "Two Concepts of Irreversible Environmental Harm," Working Paper (Chicago: University of Chicago Law School, 2008), https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1362&context=public_law_and_legal_theory.

[98] Sunstein, "Two Concepts of Irreversible Environmental Harm."

[99] United Nations General Assembly, "Rio Declaration on Environment and Development."

Figure 3-1: Project Classification Process for the BRI Green Light System



Source: Authors.

of mitigation/compensation/adaptation mechanisms. The report highlights the combination of a taxonomy-based approach and a process-standard approach that financial institutions apply across all countries where they invest:

- **Taxonomy:** The taxonomy-based approach is applied in China and the European Union (EU), among others, to allow financial institutions to easily identify projects (e.g., Chinese Green Credit Catalogue) or define green by applying environmental emission thresholds (e.g., EU Taxonomy) for different sectors based on science-based thresholds for green and non-green projects.
- **Process and management:** To support the taxonomy-based approach, several institutions, such as the World Bank, IFC, and various NGOs, provide process standards to ensure environmental risk management through safeguard procedures and sector-specific Environmental, Health, and Safety (EHS) procedures that are applied in all countries.

A process combining the two approaches is proposed (see Figure 3-1).

In the first step of project classification, projects are evaluated regarding their significant negative environmental risk potential in pollution, climate, and biodiversity. If a project has no significant harm potential, it will be "green" or "yellow," depending on its positive environmental contribution. If a project has negative harm potential, it is first considered "red" but should be evaluated for possible measures along the mitigation hierarchy[100] to avoid, minimize, or compensate for environmental harm as well as for its potential for positive contribution.

The positive evaluation impact potential is evaluated in the second step. A project can have a direct significant positive environmental contribution potential. "Significant" means that the project has an ecological positive impact on more than the micro-environment directly surrounding it (spatial dimension) and that the impact is cumulatively and significantly positive throughout all project phases (temporal dimension), as specified in Section 3.1 definitions. Projects that have no significant harm risk and have at least one significant positive contribution are considered "green," while those without potential negative impact and positive contribution are considered "yellow."

For projects identified as having significant harm potential in step 1 (red projects), the second step is to evaluate their ability to manage the environmental risks through compensation and/or

[100] Concept emerged from biodiversity protection, refers to a sequence of measures to avoid, mitigate, restore, or rehabilitate, and finally offset or, failing that, compensate, to achieve no overall negative impact on biodiversity or on balance a net gain.

mitigation efforts. In this way, the Green Light System (GLS) Project Classification provides a flexible project evaluation mechanism that allows projects to "upgrade" their category depending on local circumstances and needs. Accordingly, projects that apply environmental management with measures to mitigate, compensate for, or adapt to address potential environmental risks can upgrade their impact category, that is, from red to yellow, or yellow to green to become "red" projects with "yellow" or "green" impacts (red/yellow or red/green projects).

Mitigation and compensation activities should neutralize environmental risks (to move from red to yellow) through acceptable avoidance, mitigation, and compensation measures applicable to the local context and in line with multilateral development finance institutions' technical standards to safeguard alignment of the project with global environmental frameworks. Evaluation criteria should take into consideration the mitigation and compensation mechanisms, as well as actual environmental and ecological impacts.

By applying this two-tiered system of evaluation of direct impact in the first step and available "mitigation" measures through environmental management, for example, in the second step, the process follows the recommendation of having a mixed "taxonomy"-based and "process"-based approach.

The philosophy for positive contribution and significant environmental risk for the three environmental dimensions are shown in Table 3-1.

3.3 Specific Project Classification Criteria

Specific criteria for different projects are needed to evaluate different projects for their significant environmental risk and contribution potential in line with the concept above (see Table 3-1). As seen, specific threshold criteria are particularly relevant for climate-related considerations. At the same time, biodiversity and pollution-related considerations are similar across all project types.

All projects that encroach on key biodiversity areas are considered "red," regardless of any other contributions. According to the process above, however, projects that are originally considered "red" can become "red/green" and "red/yellow," if they clearly manage the identified environmental risks associated with the project through mitigation and/or adaptation measures.

For example, a sewage treatment project close to a key biodiversity area would at first instance be classified as a "red" project, requiring special environmental management and mitigation procedures throughout the whole project lifecycle. Once those are in place and implemented, the sewage project could become "red/green" due to its potential environmental benefits for the level of pollution.

Table 3-2 shows specific criteria for projects in energy, transport, agriculture, and manufacturing for the three dimensions of pollution prevention, climate change mitigation, and biodiversity conservation. The specific thresholds are based on international practices for sustainable finance provided by governments (e.g., EU Taxonomy,

Table 3-1: Concepts of Positive Environmental Impact and Significant Harm

	Pollution	Climate Change	Biodiversity
Use of proceeds must be tied to green investment	The project contributes to a significant and absolute reduction of pollution compared to the current environment.	The project accelerates the pathway to a low-carbon economy in line with the Paris Agreement, while • The project does not expand the lifecycle of industries or projects that undermine the Paris Agreement; • The project does not directly support industries or enabling technologies that undermine the Paris Agreement.	The project contributes to the Aichi Targets of the Convention on Biological Diversity/Post-2020 Global Biodiversity Framework, and/or the project contributes to a higher biological diversity compared to the status quo.
Sector-specific criteria with benchmarks	The project risks significantly worsening the status quo/the no project scenario of pollution.	The project undermines the spirit of the Paris Agreement • Directly by having high GHG emissions; or • Indirectly by contributing to other projects that significantly undermine the achievement of the Paris Agreement; or • By undermining climate change mitigation measures.	The project risks significantly worsening the status quo of biodiversity.

Source: Authors.

Chinese Green Bond Catalogue), as well as practice standards (e.g., IFC Performance Standards, Food and Agriculture Organization of the United Nations [FAO], and United Nations Industrial Development Organization [UNIDO]). A full preliminary BRI project classification list is available in Chapter 4.

Table 3-2: Specific Contribution and Harm Criteria for Green Development Guidance

Sector	Energy	Passenger Transport	Freight Transport	Agriculture	Manufacturing
Pollution					
Positive contribution	Neutral criteria plus the following: • Improvement of either air, water, and/or soil quality through project, relative to pre-project implementation status; and/or • Directly enables other activities to make a substantial contribution to pollution control, while not leading to a lock-in of assets that undermine long-term environmental goals				
Neutral	All of the following: • No negative impact on water quality (ground water, river water, ocean, other waters) • No negative impact on soil quality • No negative impact on air quality (e.g., PM, CO, NO_x, O_3,. . .) • No significant negative noise impact in air, on ground, or in water (decibel threshold yet to be defined)				
Significant harm risk	At risk of not meeting either of the neutral criteria				
Biodiversity					
Positive contribution	Neutral criteria plus improvement of biodiversity (e.g., higher genetic biodiversity with same biodiversity mass, more biodiversity mass with equal genetic diversity)				
Neutral	All of the following: • Project not within 10 km of KBA • Supply chain not affecting KBA • Project not affecting ecosystem services • Project not affecting livelihoods of hunters, gatherers, fishers • Project's impact limited to within less than 500 m of site (e.g., water temperature impact, water chemistry impact) • Does not affect routes of migratory species • All biodiversity impacts reversible within 24 months after project disassembly				
Significant harm risk	At risk of not meeting either of the neutral criteria				

Table 3-2: Specific Contribution and Harm Criteria for Green Development Guidance (cont.)

Sector	Energy	Passenger Transport	Freight Transport	Agriculture	Manufacturing
Climate					
Positive contribution	• <100g CO_2e/kWh average emissions over whole project lifecycle and supply chain	• Zero direct emissions • Total emissions from interurban passenger rail: <50g CO_2e/ passenger-km until 2025 Infrastructure: • Active mobility (including cycleways) • Nonelectrified infrastructure with existing plan for electrification	• Not transporting fossil fuels • Freight rail: <50% lower than average reference CO_2 emissions of HDVs (~90g CO_2e/tkm) • Nonelectrified infrastructure with existing plan for electrification	• No conversion of high-carbon stock land to crop production • Maintain/increase existing CO_2 stocks for at least 20 years through appropriate management practices • Wetlands, continuously forested areas, peatland, highly biodiverse grasslands • Avoid or reduce GHG emissions (incl. from inputs) through appropriate management practices (e.g., enteric fermentation, management of agricultural soils, nature management) • Reduction in GHG emissions over a period, compared to emissions at the start of that period	• Low carbon emission either through use of at least 90% green electricity and/or offsetting of at least 90% emissions (Scope 1 & 2) through carbon offsets (carbon credit, CCS)[101] • Directly enables other activities to make a substantial contribution to the 3 key environmental objectives, while not leading to a lock-in of assets that undermine long-term environmental goals
Neutral	• 100–300g CO_2e/kWh average emissions along whole project lifecycle and supply chain	• 50–150g CO_2e/ passenger- km (valid until 2025) • For low-carbon transport: must be fundamental to transport operations	• 90–150g CO_2e/tkm • Not dedicated to transporting fossil fuels	• No significant reduction or increase of CO_2 emissions	• Use of electricity similar to "neutral" category • No significant harm or contribution to pollution control • No significant harm or contribution to biodiversity
Significant harm risk	• >300g CO_2e/kWh[102] average emissions along whole project lifecycle and supply chain	• At risk of not meeting either of the neutral criteria	• At risk of not meeting either of the neutral criteria	• Conversion of high-carbon stock land to crop production • Significant Increase in CO_2e production, e.g., through inappropriate management (e.g., enteric fermentation, soils, manure, overuse of fertilizer)	• At risk of not meeting either of the neutral criteria

Note: CCS = carbon capture and storage; KBA = key biodiversity area; HDV =heavy-duty vehicles.

[101] Many manufacturers from a variety of industries have committed to net-zero carbon for their Scope 1 (direct emissions) and Scope 2 (indirect emissions from electricity purchased and used) within the next few years (e.g., Siemens, ThyssenKrupp, HeidelbergCement, Vale, Microsoft, Rolls Royce, Unilever, Apple). Many manufacturers have also committed to net-zero carbon emissions, including their Scope 3 emissions (emissions from use of products) (e.g., Volkswagen, BMW, Apple). Some manufacturers have committed to remove carbon from the atmosphere (e.g., Microsoft announced it would remove carbon from the atmosphere that the company had emitted since it was founded in 1975); https://www.edie.net/library/How-are-manufacturers-approaching-net-zero-and-the-green-recovery-/6986.

[102] Based on EU Taxonomy, which specifies significant harm for climate in the energy production as 262g CO_2e/kWh.

CHAPTER 4.

PROVIDE POSITIVE AND NEGATIVE BRI PROJECT LISTS

Taking into account the key areas of investment in the "Belt and Road" and the environmental impacts of these industries, this study conducted a first environmental impact analysis of the energy infrastructure, transportation infrastructure, manufacturing, mining, agriculture, and land use sectors to make a preliminary categorization of Belt and Road projects. Accordingly, the first results are, as follows:

- **Red projects/negative list (projects requiring stricter supervision and regulation) include,** for example, hydroelectric power generation, coal-fired power generation (including new coal-fired power plants and upgrading of existing coal-fired power plants), gas-fired power generation, railway construction (long-distance, passenger, or freight), urban freight transportation with emission standards below Euro IV/national IV standards (or similar local applicable one), construction of ports and their supporting facilities involving the use of fossil fuels for storage or transportation, large livestock and poultry breeding plants, mining, petrochemicals, industrial park construction, etc.
- **Yellow projects (projects with moderate impacts)** include, for example, waste-to-energy projects, urban freight transportation with emission standards above Euro IV/national IV standards (or similar local applicable one).
- **Green projects/positive list (encouraged)** include, for example, solar photovoltaic, wind power, geothermal energy, mini/micro-grid (for transmission of clean energy), electric transportation infrastructure, construction of green ports and their supporting facilities, forestation, etc.

All projects, no matter their category, that encroach on key biodiversity areas are considered "red," regardless of any other contributions. According to the process above, however, projects that are originally considered "red" can become "red/green" and "red/yellow," if they manage the identified environmental risks associated with the project through mitigation and/or compensation measures (Box 7). All projects require a minimum local EIA and for yellow and red projects, international best practice EIAs. Preliminary list is provided in Table 4-1.

Box 7: How to Read the Positive and Negative List of Belt and Road Initiative Projects in Table 4-1

In Table 4-1, the positive and negative list of BRI projects is separated into different sectors (e.g., energy, transport, manufacturing). Within each sector, different project types are evaluated, such as solar photovoltaic power generation as a project type in the energy sector. For each project type, a specification is provided to delineate the project type (e.g., project type "green rail passenger transport [interurban]" is electrified transport, whereas "passenger rail transport [interurban]" is nonelectrified).

According to the environmental threasholds shown in Table 3-2, each project type is classified in a ***category*** based on project characteristics (green, yellow, red). Yellow and red projects can apply mitigation and compensation (M/C) measures, as described in the specification to improve their ***category with M/C***. The ***References*** provides further guidance and the sources of the specifications.

For example, the project category "green rail passenger transport (interurban)" is a red project category, due to the risk of linear infrastructure construction on biodiversity. However, with sufficient environmental management, for example, through the application of IFC Performance Standard 6, this project will be red/green due to the positive contribution to a low-carbon transport system.

Meanwhile, "rail passenger transport (interurban)" is a red project category, also due to the risk to biodiversity. Through mitigation and/or compensation, this project will "only" become red/yellow, as it does no significant harm, but does not contribute to a low-carbon transport system (due to the nonelectrified nature of the rail).

Source: Authors

Table 4-1: Positive and Negative Lists of BRI Projects

Sector	Project Type	Specification	Category	Category with M/C	References
Infrastructure – Energy					
Renewable energies	Construction and operation of solar photovoltaic (PV) power generation	Solar power facilities: Construction and operation of facilities using solar power to generate electricity, which includes solar photovoltaic power generation and solar thermal power generation facilities. Among them, component products selected for solar photovoltaic power generation facilities should meet the following requirements: The minimum photoelectric conversion efficiency of polycrystalline silicon cells and monocrystalline silicon cells shall not be less than 19% and 21%, respectively; The minimum photoelectric conversion efficiency of polycrystalline silicon cell modules and single crystal silicon battery modules shall not be less than 17% and 17.8%, respectively; The minimum photoelectric conversion efficiency of silicon-based, CIGS, cadmium telluride photovoltaics (CdTe), and other thin-film battery modules shall not be less than 12%, 14%, 14%, and 12%, respectively; The decay rates of polycrystalline silicon battery modules and monocrystalline silicon battery modules shall not be higher than 2.5% and 3.0%, respectively, in the first year, and not higher than 0.7% per year, and not higher than 20% within the period of 25 years; the attenuation rate of thin-film battery module shall not be more than 5% in the first year, no more than 0.4% per year in the following year, no more than 15% within the period of 25 years.			i.a. CBI, PBOC, EU, SASB
	Construction and operation of hydroelectric power generation facilities	Specify carbon emission due to flooding (e.g., based on CBI: power density >5W/M2, estimated reservoir emission intensity <100g CO_2e/kWh). **Mitigation measure:** Application of internationally relevant hydroelectric power EHS standards for mitigation hierarchy of environmental damage (e.g., IFC 2015 Hydroelectric Power Standard).			i.a. CBI, PBOC, EU, SASB
	Construction and operation of wind power generation	Specify bird migratory areas, design standards, GB/ISO, or other local relevant standards.			i.a. CBI, PBOC, EU, SASB
	Construction and operation of geothermal power generation	Specific to engineering construction, operation, and maintenance: no fugitive emissions of GHG (e.g., EU standards); facilities of geothermal energy exploitation: construction and operation of building heating and cooling facilities using heat pumps and other technologies to extract shallow geothermal energy (including rock and soil heat sources, groundwater heat sources, surface water heat sources, etc.); use of medium and high temperature geothermal heat, medium and low temperature geothermal heat, dry heat rock, and other geothermal resources; construction and operation of power generation facilities.			i.a. CBI, PBOC, EU, SASB
Fossil fuels	Construction and operation of coal-fired power production				i.a. CBI, PBOC, EU, SASB
	Retrofitting of existing coal-fired power plants	Technology enabling life extension of coal-fired power plant			i.a. CBI, PBOC, EU, SASB
	Construction and operation of gas-fired power plant and associated facilities, such as transmission and storage	Gas-fired energy can only be seen as a transition technology if no other forms of baseline energy supply is available due to its relatively high carbon emissions. **Mitigation measure:** Application of CCUS to reach less than 100g CO_2/kWh.			i.a. CBI, PBOC, EU, SASB

Table 4-1: Positive and Negative Lists of BRI Projects (cont.)

Sector	Project Type	Specification	Category	Category with M/C	References
Neutral	Construction and operation of mini-and micro-grids	If enabling technology is connected to green energy sources as specified in the catalogue and not connected to fossil-fuel generation backups, the comprehensive energy efficiency of the equipment should be greater than or equal to 70%. The construction and operation of multi-energy complementary system increases the capacity of the regional power grid to accept intermittent renewable energy such as wind and solar. The system waste rate of wind power should be controlled within 5%, and of solar power, within 3%.			i.a. CBI, PBOC, EU, SASB
Infrastructure – Energy					
Waste-to-energy	Construction and operation of waste-to-energy infrastructure	Including pollution control			i.a. CBI, PBOC, EU, SASB
Infrastructure – Transportation					
Passenger transport	Construction and maintenance of **green passenger rail transport (interurban)**	Electrified or existing plan to implement electrification within 5 years, then green **Mitigation measure:** Strict protection of biodiversity and minimization of impacts on biodiversity (e.g., IFC PS6).			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP, ISO14040 and ISO140 44
	Construction and maintenance of **passenger rail transport (interurban)**	Nonelectric and with emission above 50g CO_2/passenger km (average) **Mitigation measure:** Strict protection of biodiversity and minimization of impacts on biodiversity (e.g., IFC PS6).			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP, ISO14040 and 44
	Construction and maintenance of **public (urban) transport**	E.g., subways, MRT, BRT, dedicated bus lanes			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP, ISO14040 and 44
Land-based freight transport	Construction and maintenance of **freight rail** transport infrastructure	Not used for transportation of fossil fuels, electrified or existing plan to implement electrification within 5 years. **Mitigation measure:** Strict protection of biodiversity and minimization of impacts on biodiversity (e.g., IFC PS6).			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP, ISO14040 and 44
	Construction and operation freight rail for fossil fuels	Only as replacement of already existing transport of fossil fuels by road, only for facilities existing prior to 2020. **Mitigation measure:** Strict protection of biodiversity and minimization of impacts on biodiversity (e.g., IFC PS6).			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP
	Urban freight transport services by road	If transport vehicle fuel standard is lower than EUR/CHINA IV (or similar local applicable one)			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP
	Good practice urban freight transport services by road	If transport vehicle fuel standard higher than EUR/CHINA IV (or similar local applicable one)			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP
	Green urban freight transport services by road	If transport vehicle fuel standard higher than EUR/China VI or electric vehicles			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP
	Construction and operation of infrastructure and systems for electrification of passenger road transport, both public and private transport	More than 50% of electricity for electrification of passenger transport must come from green electricity sources, with a clear timeline for 100% green electricity.			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP

Table 4-1: Positive and Negative Lists of BRI Projects (cont.)

Sector	Project Type	Specification	Category	Category with M/C	References
Ports and water-based freight transport	Ports and adjoining facilities with services dedicated for fossil fuel transport, storage				i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP
	Ports and adjoining facilities without services dedicated for fossil fuel transport, storage	Ports with clean fuels, control pollution and minimize harm to marine and coastal life, appropriate accident risk management, etc. **Mitigation measure:** Strict protection of biodiversity and minimization of impacts on biodiversity (e.g., IFC PS6), strict pollution control by minimizing polluting emissions (e.g., In line with International Maritime Organization [IMO]), emission control areas with sulphur content of fuel not exceeding 1% in line with Annex VI of the International Convention for the Prevention of Pollution from Ships); and prevention and emergency measure implementation for oil spills as well as ballast water treatment (MARPOL 73/78 Annexes I-VI).			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP, IMO, MARPOL
	"Green" port and full port upgrades	"Green" according to international standards in regard to biodiversity conservation, pollution, and emission control as well as environmental risk management (e.g., MARPOL, IMO, UNCLOS; provision of LNG for fueling, onshore-based power supply, mitigation of noise impact). **Mitigation measure:** Strict protection of biodiversity and minimization of impacts on biodiversity (e.g., IFC PS6), strict pollution control by minimizing polluting emissions (e.g., in line with International Maritime Organization [IMO) emission control areas with sulphur content of fuel not exceeding 1% in line with Annex VI of the International Convention for the Prevention of Pollution from Ships); and prevention and emergency measure implementation for oil spills as well as ballast water treatment (MARPOL 73/78 Annexes I-VI).			i.a. CBI, PBOC, EU, SASB, IFC, GIZ, UNDP, IMO, MARPOL
Agriculture and land use – Forestry					
Forestry	Rehabilitation, reforestation, afforestation, forest management	Planned and stepwise cessation of cultivation in the cultivated land with serious soil erosion; desertification, salinization, and rocky desertification to protect the ecological environment; grassland and forestry restoration according to local conditions; restoring vegetation and inhibiting the deterioration of the ecological environment; and sustainably managing non-monocultures with focus on local species.			i.a. PBOC, CBIRC, EU
	Tree planting and grass, tree seedlings, and flowers for nonindustrial but recreational use	Planned and stepwise cessation of cultivation in the cultivated land with serious soil erosion; desertification, salinization, and rocky desertification to protect the ecological environment; grassland and forestry restoration according to local conditions; restoring vegetation and inhibiting the deterioration of the ecological environment; and sustainably managing non-monocultures with focus on local species.			i.a. PBOC, CBIRC, EU

Table 4-1: Positive and Negative Lists of BRI Projects (cont.)

Sector	Project Type	Specification	Category	Category with M/C	References
Agriculture and land use – Livestock					
Livestock	Large-scale livestock production and animal husbandry	Risk of liquid waste from livestock (e.g., fecal and urinary waste) and nutrients containing antibiotics, hormones, and pesticides leading to environmental pollution; risk of deforestation and desertification due to clearing for pastures; high water needs; risk or direct emissions from livestock. **Mitigation measure:** Integrated in wider land use concept to increase environmental beneficial interaction; limits for animal manure per square meter; no tolerance for point source pollutions and no discharge of manure into surface waters; nutrient management plans, etc.			i.a. FAO, UN, IFC
	Green animal husbandry	No conversion of high-carbon stock land to crop production used to feed livestock; Avoid or reduce GHG emissions (incl. from inputs) through appropriate management practices (e.g., enteric fermentation, management of agricultural soils, manure management); Reduction in GHG emissions over a period, compared to emissions at the start of that period; Total recycling of waste; Strict management of species invasion; Application of FAO Animal Husbandry Standards, for example, 8378 and related standards.			i.a. FAO, EU
Agriculture and land use – Nature-based solution					
Infrastructure	Planting and management of nature-based solutions, nature climate solutions (e.g., mangroves)	Nature-based solutions (e.g., mangroves) as alternative to grey infrastructure and/or to lower energy use, to protect coastlines, to improve water quality, etc.			i.a. FAO, UN, Paulson Center
Mining and industry – Mining					
Mining	Construction and operation of coal mines	With coal mostly supporting coal-fired power plants, coal mining is considered to extend the life span of coal-fired power plants.			i.a. EU
	Construction and operation of ore mines	Risks include accidents with explosives as well as gases and dust for mineworkers and surrounding environment; heavy metals, acids, and other pollutants that contaminate water resources; land use change and long-term effects of erosion or chemical contamination and leaking containment ponds. **Mitigation measure:** Application of international best practice sustainable mining standards, for example, IFC EHS Guidelines for Mining.			i.a. EU, IFC
Mining and industry – Manufacturing					
Chemicals and pharmaceuticals	Construction and operation of chemical and pharmaceutical industry facilities and equipment	Wastewater and liquid waste may contain toxic substances presenting a risk to water and surrounding environment; disaster risks in chemical plants include fires, explosions, and accidental release of toxic chemicals into the environment. **Mitigation measure:** Application of international best practices (e.g., IFC, GB, ISO), for example, IFC EHS for Pharmaceuticals and Biotechnology Manufacturing.			i.a. IFC, SASB, EU
Petrochemicals	Construction and operation of petrochemical industry facilities and equipment	Risk of toxic and nontoxic waste during extraction, refinement, and transportation; risk of harmful industry by-products, such as volatile organic compounds, nitrogen/sulphur compounds; risk of oil spills harming air, water, and soil; high energy use. **Mitigation measure:** Application of best practices, for example, IFC EHS Guidelines for Large Volume Petroleum-Based Organic Chemicals Manufacturing; Petroleum Refining and EU Road Map Document for a Sustainable Chemical Industry, in addition to GB.			i.a. IFC, EU, SASB

Table 4-1: Positive and Negative Lists of BRI Projects (cont.)

Sector	Project Type	Specification	Category	Category with M/C	References
Paper and pulp	Construction and operation of paper and pulp production facilities and equipment	Risk of high energy consumption for pulping and bleaching; effluents from paper mills may contain toxic and nontoxic substances with negative impacts on water quality; emissions to air can impact surrounding areas. **Mitigation measure:** Application of best practices, for example, IFC EHS Guidelines for Pulp and Paper Mills.			i.a. IFC; SASB,
Iron and steel	Construction and operation of iron and steel production infrastructure and equipment	High energy needs, wastewater may contain heavy metals and oils, waste from metal production includes furnace slag—possibly in huge quantities; exhaust gases from furnaces and smelters may risk long-term contamination and poisoning. **Mitigation measure:** Application of best practices, for example, IFC EHS Guidelines for Integrated Steel Mills and offsets for emissions.			i.a. SASB, IFC
Cement	Construction and operation of cement production infrastructure and equipment	High energy needs and heat emission from production in addition to dusts and fumes from combustion, in addition to environmental risks from extraction of raw materials. **Mitigation measure:** Application of best practices IFC EHS Guidelines for Cement and Lime Manufacturing and offsets for emissions.			i.a. IFC, SASB, EU
Textile	Construction and operation of textile production infrastructure and equipment	Wastewater and liquid waste may contain toxic substances presenting a risk to water and surrounding environment; high amounts of water essential with risks to air-borne emissions. **Mitigation measure:** Application of best practices, for example, IFC EHS on Textiles Manufacturing or IFC EHS on Tanning and Leather Finishing.			i.a. IFC
Automotive	Construction and operation of automotive and car parts production facilities	High resource use; high energy use in production; high chemical use in conventional lacquering. **Mitigation measure:** Application of sustainable practices including water-based lacquers; high percentage of recycling and careful disposal of hazardous waste; offset of emissions.			i.a. VDA
Electronics	Construction and operation of electronics production facilities	Wastewater and liquid waste may contain toxic substances presenting a risk to water and surrounding environment. **Mitigation measure:** Application of IFC ESH guidelines for semiconductors/other electronics manufacturing including recycling of waste combined with well-managed hazardous waste disposal, including oil and greases, solvents, and degreasing fluids, sludges from electroplating and wastewater treatment, insulating oil containing PCBs to improve efficiency and minimize environmental impacts.			i.a. IFC, SASB
Industrial parks	Construction and operation of good practice industrial park	**Mitigation measure:** Strict management of waste, energy efficiency in accordance with local best practices.			i.a. UNIDO
	Construction and operation of green or eco-industrial park (EIP)	Majority of electricity is green with a clear pathway for 100% renewable and full carbon offset for non-green energy; recycling of waste, wastewater, etc.			i.a. UNDIO, ADB, GEIPP

Note: CIGS = copper indium gallium selenide; EHS = Environmental, Health, and Safety; GB = Guobiao Standards of China; ISO = International Organization for Standardization; CCUS = carbon capture, utilization and storage; BRT = bus rapid transit; UNDP = United Nations Development Programme; UNCLOS = United Nations Convention for the Law of the Sea; MARPOL = the International Convention for Prevention of Marine Pollution For Ships; FAO = Food and Agriculture Organization of the United Nations; PCB = polychlorinated biphenyls

Source: Authors.

CHAPTER 5.

ENHANCE THE LIFECYCLE: ENVIRONMENTAL MANAGEMENT OF BRI PROJECTS

The classification of projects and formulation of negative and positive lists guided by the GLS must be supported by regulatory, management, and enforcement measures to be effective. As research shows, governments and regulators, NGOs, and financial institutions in China and internationally apply various approaches to clarify the responsibilities of project investment stakeholders at different stages of the project to minimize environmental risks. The following sections offer nine recommendations to stakeholders to accelerate green BRI investments. The nine recommendations are as follows:

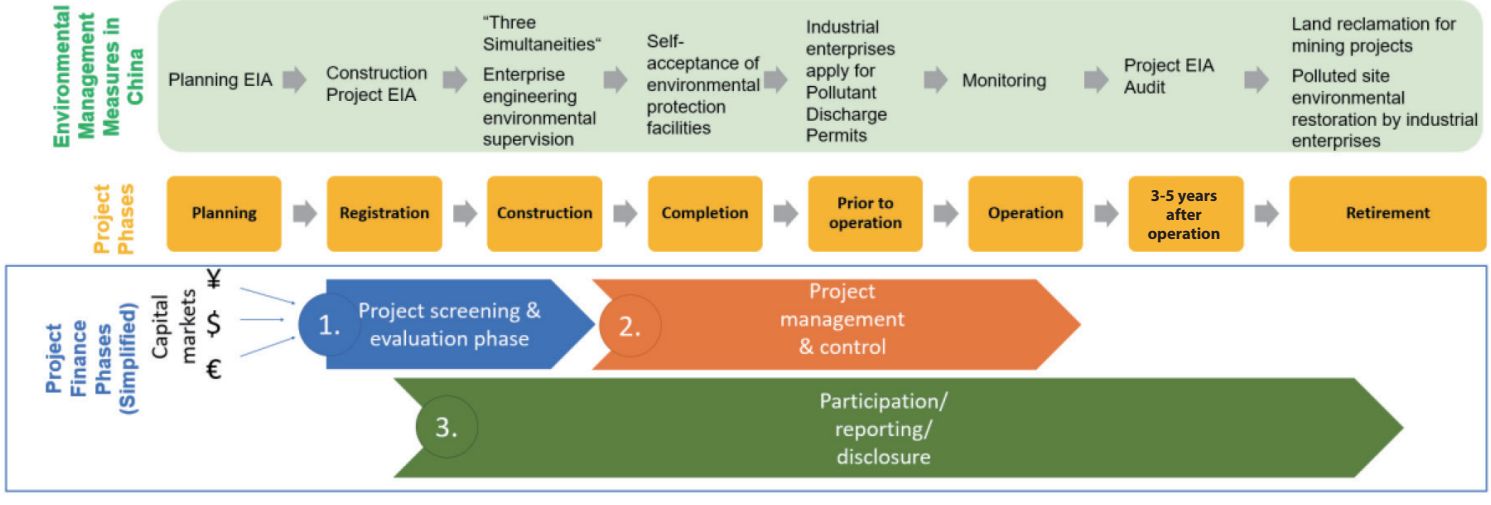
- **Recommendation 1:** Address all phases of green overseas investments – from evaluation to management and reporting
- **Recommendation 2:** Provide Exclusion Lists based on environmental criteria
- **Recommendation 3:** Institutionalize independent Environmental Impact Assessments (EIAs), particularly for high-risk projects
- **Recommendation 4:** Provide differentiated conditions for green and red projects
- **Recommendation 5:** Demand an Environment and Social Management System from project owners and developers
- **Recommendation 6:** Provide a grievance mechanism
- **Recommendation 7:** Apply and integrate covenants
- **Recommendation 8:** Provide public environmental reporting
- **Recommendation 9:** Accelerate international cooperation for the environment

5.1 Recommendation 1: Green Development Guidance Applicable across the Whole Project Lifecycle

To ensure that the environmental impact is properly managed throughout the lifecycle of BRI projects, the first recommendation is for stakeholders to look at projects along three phases in line with international and Chinese domestic practices (see Figure 5-1):

1. In the project planning and evaluation phase before an investment decision is taken, investors evaluate climate and eco-environmental risks and impacts of the project, categorize the project, and develop safeguards and mitigation measures to minimize negative ecological impacts depending on identified environmental risks (e.g., encroachment of biodiversity areas). To classify projects, investors can use the Green Light System Project List or the relevant evaluation process, while they should also ensure relevant mitigation/adaptation measures to minimize environmental harm or maximize nature-positive outcomes. Projects that are excluded (see Recommendation 2) should not receive investment.
2. In the project execution/implementation phase, investors must ensure and enforce safeguards and mitigation measures agreed upon with the project owner, for example, by providing compensation or applying covenants.
3. In the project reporting/disclosure phase, investors are required to collect and possibly publish reports and data on the environmental performance of their investments (this activity typically is required in parallel to the other phases).

Figure 5-1: Three Phases of Project Lifecycle Where Green Development Guidance Is Applicable



Source: Authors.

5.2 Recommendations 2 to 5: Project Planning and Evaluation Phase

The first phase of the project finance lifecycle is crucial, as, ideally, it should prevent financing of nonaligned projects and ensure proper environmental risk management and inclusion of mitigation/compensation/adaptation measures in the investment decision and contract.

The report suggests that pilot projects should first be carried out in sectors with larger investment and higher environmental impacts, such as energy, transport, agriculture, and mining. It is recommended that investments be aligned with internationally applicable higher standards. Application of such standards would lower transaction costs for investors due to better comparability and economies of scale.[103] For projects that do not fall into specific sectors, where international best practice sector-specific environment, safety, and health (ESH) or safeguard guidance are not available, Chinese standards should be applied. At the same time, EIAs should be conducted by independent experts for all projects to ensure impartiality in the evaluation.

The requirement for EIAs and Environment and Social Management Systems (ESMS) should also accelerate the understanding within financial institutions and their clients that green project finance is not a "box-ticking" exercise, but requires a holistic and principled approach that incorporates a variety of different factors.

Through the categorization of projects, the concept of blended finance (mixture of concessionary and non-concessionary finance) can also be accelerated, where green projects could receive more concessionary finance.

Table 5-1 shows detailed recommendations for this phase. Based on the above principles, this report presents a detailed process for classifying projects and a preliminary project list in Chapter 4.

Table 5-1: Recommendations for Project Planning and Evaluation

Recommendations	International Practices	Chinese Practice Examples	Comments	Responsible Stakeholders
Recommendation 2: **Exclusion of projects** that cause significant environmental harm that cannot be mitigated	KfW, AFD, some other OECD countries exclude fossil fuel financing at least since 2019. Japan and Republic of Korea consider strengthening overseas coal power plant investment in 2020. Bangladesh and India announced in 2020 they are considering banning fossil fuel investments. Most financial institutions ban investments on environmental issues, e.g., in ozone-depleting substances, trade in wildlife under CITES, logging.	NDRC's Notice on Sensitive Sectors in Overseas investments, 2018, however, without environmental considerations.	Projects on that Exclusion List are those that have substantially adverse impact on ecological development goals without realistic possibility for mitigation.	Government and financial institutions
Recommendation 3.a **Independent Environmental Impact Assessments** (EIAs), including applying sector-specific EIA requirements. Higher EIA requirements for medium- and high-risk environmental projects, e.g., Red and Yellow projects	Developing finance institutions apply World Bank Environmental and Social Standards (ESS) or IFC Performance Standards for all projects, with more rigorous requirements for medium- and high-risk projects. Equator Principles banks require the application of IFC Performance Standards for A and B projects. A number of financial institutions, governments, and NGOs provide sector-specific guidance.	The MEE requires EIAs for projects within China.	The EIA should always be conducted with relevant local stakeholders.	Financial institutions and their clients.

[103] The application of international standards was also stipulated at both the 2017 and the 2019 Belt and Road Forums; Xi Jinping, "Remarks by H.E. Xi Jinping President of the People's Republic of China at the Press Conference of the Second Belt and Road Forum for International Cooperation."

Table 5-1: Recommendations for Project Planning and Evaluation (cont.)

Recommendations	International Practices	Chinese Practice Examples	Comments	Responsible Stakeholders
Recommendation 3.b **Online publication of EIA results** in the local language, Chinese, and English at least 60 days before investment decision is made	Equator Principles stipulate online publication of all EIAs EBRD publishes all its EIAs online for 120 days for public consultation.		Publication of the EIA allows the public to participate and express concerns, which should be included in the ESMS (see next point).	Financial institutions and their clients
Recommendation 4. **Accelerated decision-making and improved conditions for green** projects, more stringent conditions for high-risk projects	Equator Principles and OECD "Guidelines of Nonbinding Framework for the Orderly Use of Officially Supported Export Credits" encourage faster approval and favorable terms for projects in the green category. The Shandong Fund, China provides below-market financing conditions for transformative projects and above-market rates for "good practice" projects.	PBOC Notice Regarding Promoting Credit Asset and Collateral in Central Bank Evaluation, 2017, improves relending policy, namely by accepting green loans in the short-term lending facility (SLF), as well as by accepting green bonds at AA rating as collateral in its medium-term lending facility (MLF). Furthermore, since 2018 banks' green performance is included as a factor in the PBOC macroprudential assessment (MPA), by which the interest rate given to a bank on its required reserves in PBOC is increased if the bank is assessed to be greener.	The goal is to make funding easier for green projects, and more difficult for brown projects through financial and nonfinancial means.	Financial institutions and government
Recommendation 5. **Requirement of Environment and Social Management System (ESMS)** from project owner/client	Equator Principles stipulate banks must require clients to develop and maintain an ESMS to address issues raised in the EIA.	The GIP, Principle 1, requires all signatories to include environmental and sustainability considerations into corporate governance. This is not on a project-level but provides best practice in application.	The ESMS particularly focuses on how to deal with unavoidable environmental and social issues in an equitable and transparent manner. A publication of the ESMS can further build trust.	Financial institutions, their clients, and government

Source: Authors.

Note: NDRC = National Development and Reform Commission of the People's Republic of China; OECD = Organisation for Economic Co-operation and Development; CITES = Trade in Endangered Species of Wild Fauna and Flora; MEE = Ministry of Ecology and Environment of the People's Republic of China; EBRD = European Bank for Reconstruction and Development; PBOC = People's Bank of China; GIP = Green Investment Principles for the Belt and Road.

5.3 Recommendations 6 to 7: Project Implementation Phase

In the second phase, the project has already received investment and needs to be implemented and managed. In this phase, financial institutions and project investors and implementers must ensure environmental compliance of their projects. While a host-country would require only the local government to manage environmental violations, global best practice requires financial institutions to enforce a variety of environmental measures. This not only supports environmental alignment of a financial institution's portfolio, but also reduces a variety of risks, such as stranded asset risks, reputation risks, or even legislative risks. Successful investors also welcome local community and civil society engagement in host countries to deter irresponsible corporate behavior and increase public interest in the success of projects. Table 5-2 shows the detailed recommendations for this phase.

Table 5-2: Recommendations for Project Implementation Phase

Recommendations	International Practices	Chinese Practice Examples	Comments	Responsible Stakeholders
Recommendation 6. **Transparent grievances mechanisms**	Many developing finance institutions (e.g., IFC, AIIB) and private finance institutions have established clear and transparent grievance mechanisms to allow concerned members of the public to alert financial institutions about breaches in environmental or social safeguards.	The Opinion on Implementing Environmental Protection Policies and Rules and Preventing Credit Risks (2007) requires that environmental violation information be incorporated into the national unified database of enterprise credit information.	The grievance mechanism can be linked to the CBIRC's platform under development for complaints and responses on overseas investments by Chinese banks (tentative name). FIs must provide a simple, accessible, and transparent grievance mechanism for individuals and NGOs that may be adversely affected by the project, throughout the project cycle, starting at the project appraisal stage. Projects should have dedicated staff with a publicly available contact telephone number and e-mail address, where affected individuals, NGOs, and other affected parties can contact them with concerns or objections regarding new or existing projects in the FI's portfolio.	Financial institution (FI) & government
Recommendation 7. **Requirement of Covenants** in financial agreement to enable FI to work with client in the stringent application of environmental performance and management standards	Equator Principles stipulate that financial institutions, if client has not rectified a breach of environmental and social agreement, can exercise remedies, including calling an event of default.	The State Council's "Guideline on Establishing a Modern Environmental Governance System," 2020, proposes the environmental violation record will be integrated into the credit system and stipulates linking pollution permit to EIA and financial products.	FI should support the green transition of its projects. Calling an event of default is the last option.	Financial institution

Source: Authors.
Note: CBIRC = China Banking and Insurance Regulatory Commission; IFC = International Finance Corporation; AIIB = Asian Infrastructure Investment Bank.

5.4 Recommendations 8 to 9: Project Disclosure and Reporting Phase

Project disclosure and reporting is practiced during the whole project lifecycle. Successful investors make sure they receive all relevant financial and nonfinancial information from their clients (project owners). At the same time, successful financial institutions make nonfinancial information easily and publicly available (e.g., through online publication in the local language and in English). Successful financial institutions require that all data for the reports should be either compiled and/or verified by independent experts.

China should also encourage the development of tools and mechanisms, including internal frameworks, external reviews, and better disclosure standards, to address information asymmetry in environmental and climate performance of investment projects. Table 5-3 shows detailed recommendations for this phase.

Table 5-3: Recommendations for Reporting and Disclosure

Recommendations	International Practices	Chinese Practice Example	Comments	Responsible Stakeholder
Recommendation 8a: **Application of internationally recognized independent reporting** and validation for integrated reporting that includes emissions, pollution, and biodiversity impacts (and social impacts) on the four core elements of metrics and targets, risk management, strategy, and governance.	The Global Reporting Initiative (GRI), and the Task Force on Climate-Related Financial Disclosures (TCFD) are overarching frameworks used by thousands of FIs to report on environmental impacts and risks around the globe. The EU Taxonomy and a variety of EU directives also provide clear metrics to report on a variety of sustainability metrics. Equator Principles require independent evaluation and reporting, particularly for potentially environmentally harmful projects. The EU and a number of DFIs also require independent measurement and reporting. Many developmental financial institutions and FIs report within their environmental and social frameworks about environmental and social impacts of their investments. The IFC applies the Anticipated Impact Measurement and Monitoring system (AIMM).	The Shandong Fund requires publication of environmental performance data according to the principles of the Green Climate Fund	While TCFD provides strong guidance on climate-related reporting, the Task Force on Nature-Related Financial Disclosures (TNFD) has received strong support from international finance and government stakeholders to improve biodiversity reporting frameworks.	Financial institution (FI)
Recommendation 8b: **Requirement of online disclosure** of integrated reporting, where possible	The EU Taxonomy and a variety of EU directives also provide clear metrics to report on a variety of sustainability metrics.	The State Council's "Guideline on Establishing a Modern Environmental Governance System," 2020, proposes completion and launch of mandatory environmental information disclosure for listed companies and bond issuers in China, while high-polluting companies should be publicly disclosed and blacklisted.		Financial institution
Recommendation 9: **Cooperation with relevant global authorities** to support global environmental data repository	Equator Principles require independent evaluation and reporting, particularly for potentially environmentally harmful projects. The EU and a number of DFIs also require independent measurement and reporting.		The Global Biodiversity Information Facility (GBIF) can be used for reporting biodiversity data.	Financial institution

Source: Authors.

CHAPTER 6.

PRIORITIZED AREA OF ACTION TO FORMULATE THE GREEN DEVELOPMENT GUIDANCE

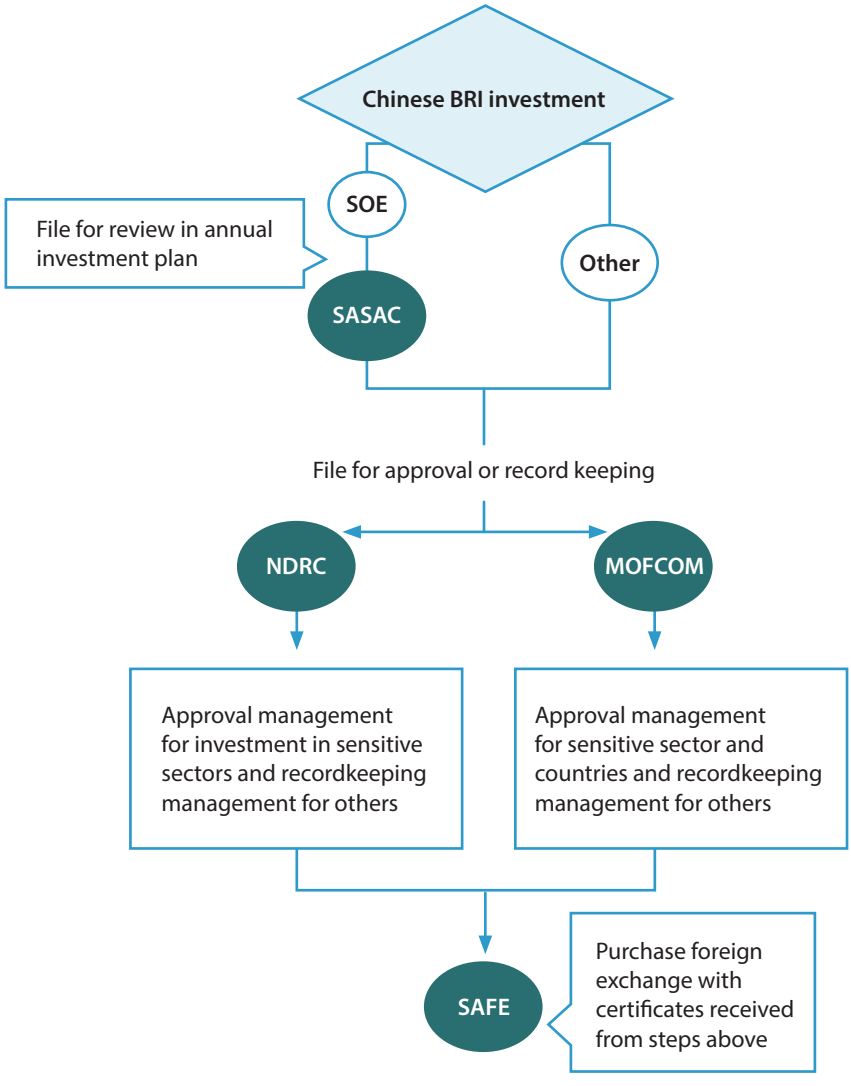
The formulation and application of Green Development Guidance for BRI Projects depends on the interaction among stakeholders from the Chinese government, the financial sector, and financial sector clients. This chapter provides an overview of current decision-making processes and from there outlines the key areas of future application of the proposals in Chapter 3 and 4 "project classification and positive and negative lists", and Chapter 5 "measures to enhance the whole lifecycle environmental management". It provides the ground for the development and application of the Guidance.

6.1 Key Authorities for Approving and Regulating BRI Projects

Further development and implementation of the Green Development Guidance in Chinese BRI finance necessitates a basic understanding of policymaker involvement in BRI investment decisions. Several governmental bodies are engaged in managing, guiding, and regulating BRI investment.

A closer look at the regulatory landscape of China's overseas

Figure 6-1: Approval and Management Process of China's Overseas Investment, Simplified.



Source: Authors.

Notes: SOE = here refers to centrally administered state-owned enterprise; SASAC = Supervision and Administration Commission of the State Council; NDRC = National Development and Reform Commission; MOFCOM = Ministry of Commerce; SAFE = State Administration of Foreign Exchange. More detailed process (e.g., division of authorities between central and local governmental agencies) is in role description of NDRC, MOFCOM and SASAC below.

investments allows for an examination of past greening efforts and potential future ones. Among the ministries listed above, a few are especially relevant to greening BRI investment along the approval and monitoring chain (Figure 6-1). The most relevant institutions and their responsibilities include the following:

The National Development and Reform Commission

The National Development and Reform Commission (NDRC) is responsible for approving China's outbound investment projects. In 2017, the NDRC issued the Measures for the Administration of Enterprises' Outbound Investment (Order No. 11, 2017), which delineates the duties of the competent authority for outbound investment, including approval and management of projects involving sensitive countries/regions or industries, and the filing and management of non-sensitive projects. Either the NDRC or the provincial level Development and Reform Commissions (DRCs) are the designated approving and filing authority, depending on project subject and investment volume: (1) NDRC is responsible for filing if the investment is a centrally managed enterprise (including centrally managed financial enterprises, enterprises directly managed by the State Council, or by agencies under the State Council); and if the investment subject is a local enterprise and the Chinese investment is US$300 million or more; (2) the investment entity will be recorded by the development and reform department of the provincial DRCs where the entity is registered if the investment subject is a local enterprise, and if the amount of Chinese investment is less than US$300 million.

In 2017, the State Council provided the NDRC, the Ministry of Commerce, the People's Bank of China, and the Ministry of Foreign Affairs, the "Guidance on Further Guiding and Regulating the Direction of Outbound Investment" (Guo Ban Fa [2017] No. 74), which designates exclusions for investment as "prohibited categories" and does not approve such outbound investment projects. Additionally, the document designates areas it supports for investment as "encouraged categories." On this basis, the NDRC has updated and released the corresponding *Catalogue of Sensitive Industries for Outbound Investment*.

The Ministry of Commerce

The Ministry of Commerce (MOFCOM) also manages overseas investment from the level of the investment entity, and records and audits overseas investment projects. In 2014, MOFCOM issued the Measures for the Administration of Overseas Investment (MOFCOM Decree No. 3 of 2014) to promote and regulate overseas investment. MOFCOM's main responsibilities include the implementation of overseas investment involving sensitive countries/regions and industries, approval management, and record-keeping management of overseas investment. The Ministry of Commerce serves as the approving authority, with central enterprises applying to the MOFCOM and local enterprises applying to the MOFCOM through the provincial commercial department. The MOFCOM and the provincial commercial authorities serve as filing authorities, according to the subject of the investment: central enterprises report to the MOFCOM; local enterprises report to the provincial commercial authorities.

State-Owned Assets Supervision and Administration Commission of the State Council

The State-Owned Assets Supervision and Administration Commission of the State Council (SASAC) mainly supervises and manages state-owned enterprises (SOEs) for the preservation and appreciation of their value. The SASAC guides SOE activities and investments and reviews their direction, scale, and capacity by formulating policies, regulations, and standards, including the Measures on the Supervision and Management of Overseas Investments by Central Enterprises (No. 35 of 2017). Central enterprises' overseas investments are managed at all stages of development; those projects over U$1 billion are submitted to SASAC for approval. Specific management requirements include the following:

Overseas investment projects included on the negative list can only be submitted to the relevant departments after SASAC examination and control; central enterprises are required to prepare the Annual Overseas Investment Plan for inclusion in their annual investment plan. SASAC records these annual investment plans or proposes amendments. In 2008, SASAC issued the Guiding Opinions on the Performance of Social Responsibility by Central Enterprises, which requires central enterprises to be responsible to shareholders, employees, consumers, suppliers, communities, and other stakeholders and the natural environment while pursuing economic benefits, to achieve comprehensive, coordinated, and sustainable development of enterprises, society, and the environment. SASAC's Decree No. 35 of 2017 "Measures for Supervision and Management of Overseas Investment by Central Enterprises," includes a special chapter called "Overseas Investment Risk Management," which clearly states that for highly significant overseas investment projects, central enterprises shall establish a risk assessment system before making an investment decision, and entrust an independent third party as the consulting agency to conduct a comprehensive assessment of the political, economic, social, cultural, market, legal, and policy risks in the host country (region).

6.2 Prioritized Area of Action to Formulate the Green Development Guidance

6.2.1 Establish a BRI classification system

Analyze the ecological environment and climate impact of projects and establish a BRI project classification and management system. Focusing on the impact of projects in terms of environmental pollution, biodiversity conservation, and climate change, a list of positive and negative projects will be specified and then expanded through technical notes (e.g., more detailed environmental criteria and assessment methods). These lists and their specifications will be adjusted according to technological developments and strategic environmental assessments (i.e., increasing stringency of environmental thresholds).

Based on the Green Development Guidance environmental benefits rating process and project classification list, provide reference and criteria for classifying investment projects in the Belt and Road region. Promote the pilot demonstration of the Green Development Guidance in BRI countries, strengthen the exchange of regional green transformation and development, and encourage FIs to self-classify their projects according to the Guidance. Explanations should be provided for criteria for upgrading project performance and achieving conversion, to guide developers and implementers of BRI projects to improve environmental performance.

6.2.2 Explore the environmental risk assessment for BRI key industries

Financial institutions and project implementers must conduct an independent environmental impact assessment of the project. The project should comply with the environmental requirements of the host country, as well as with Chinese and international best practices, including information disclosure and public participation (e.g., World Bank Environmental and Social Standards, IFC Environmental and Social Performance Standards, etc.). Guidance and provision of EIA criteria, requirements, and tools for key BRI industries to conduct EIA is needed, as well as capacity building to relevant stakeholders.

6.2.3 Apply rigorous supervision and exercise ESMS

Guide financial institutions to establish sound Environmental and Social Management Systems and improve the greening of overseas investment through internal environmental and social risk policies, assessment, tracking and management, reporting, and capacity building. Financial institutions are encouraged to establish a standardized and transparent complaint-and-response/grievance redress mechanism for potential environmental (and social) impacts of overseas investment projects. Informed by the classification of projects, ensure that project design, implementation, and operation take full account of the impacts on local stakeholders and are subject to public scrutiny.

6.2.4 Establish a sound incentive/punishment mechanism

Based on the classification of BRI projects from the Green Development Guidance, relevant authorities can strengthen their policies to support investment in “green light” projects. For example, they may explore the provision of incentives for green light projects such as dedicated guarantee and credit enhancement mechanism for green projects. In green credit performance evaluation systems, financial institutions should report on overseas activities to be comprehensively evaluated on their green performance.

Based on classification results, financial institutions participating in BRI investments should take differentiated measures for different categories of projects, that is, to strictly control and regulate "red" projects, and to manage "green" and “yellow” projects as required over their lifecycles.

- **Differentiated decision-making process.** Financial institutions can adopt measures such as easing approval and financing procedures of green projects, establishing differentiated decision-making processes for different project categories. For example, they would pilot fast-track services for “green" project approval procedures and participate prudently in the investment of "yellow" and “red” projects.
- **Differentiated risk management and EIA requirements.** Financial institutions or project implementation parties should conduct independent EIAs and apply more stringent EIA requirements for projects with higher environmental risks. For green projects, the EIA should comply, at the very least, with applicable laws, regulations, standards, and requirements of the host country. For yellow and red projects, EIAs should be based on international best practice standards, with reporting and verification carried out independently by third parties.
- **Differentiated financing conditions.** For red projects, financial institutions work with clients to rectify their breach of environmental and social agreements through inclusion of covenants in investment agreements. For UN Principles for Responsible Investment (PRI) projects, banks and policy insurance companies should formulate differentiated financing support and guarantee deposits for green, yellow, and red projects.

- **Differentiated performance evaluation and information disclosure.** With reference to existing green performance evaluation and information disclosure requirements, such as the "Green Financing Statistical System" and "Green Financial Performance Evaluation Scheme," banking institutions can collect, report, and disclose the financing status of overseas projects under the green, yellow, and red categories. Disclosure requirements for red projects should be more stringent, and the report should include noncommercially sensitive details of the project's emissions data, pollution, and biodiversity targets and their impacts, risk management measures, environmental strategies, and governance.

6.2.5 Support piloting and demonstration of the recommended Guidance

Considering the contexts of BRI countries, a classification system and project lists adapted to local resources, environment, and socioeconomic conditions should be developed as a reference for the host government; and local demonstrations of application should be promoted to encourage and facilitate its extension into more Belt and Road countries.

APPENDICES

Appendix 1: Do No Significant Harm Assessment for Cement Manufacturing Based on EU Taxonomy

Do No Significant Harm Assessment			
(1) The primary potential significant harm to other [non-climate] environmental objectives from cement manufacturing is associated with the following: • Polluting emissions in the air, associated with consumption of fossil fuels and calcination reactions in the cement kiln • Water consumption at production facilities located in water-stressed areas • Potential for soil and groundwater contamination associated with handling and storage of (hazardous) wastes used as fuel substitutes ("secondary" fuels) in the cement production process			
(2) Adaptation	Refers to the screening criteria for DNSH to climate change adaptation		
(3) Water	Identify and manage risks related to water quality and/or water consumption at the appropriate level. Ensure that water use/conservation management plans, developed in consultation with relevant stakeholders, have been developed and implemented. In the EU, fulfill requirements of EU water legislation.		
(4) Circular economy	Cement manufacturing plants accept alternative fuels such as solid recovered fuel (SRF) originating from waste, as well as secondary raw materials such as recycled concrete aggregates (RCA). For cement production sites using hazardous wastes as alternative fuels, ensure a waste management plan that meets EU standards (or equivalent for plants operated in non-EU countries) exists and is implemented.		

Source: Authors' compilation based on EU Technical Expert Group on Sustainable Finance, EU Taxonomy 2019

Appendix 2: Comparison of Leading Green Frameworks

Frameworks/ Principles	Equator Principles	Green Investment Principles	Task Force on Climate-Related Financial Disclosures (TCFD)	UN Principles for Responsible Investment (PRI)
Year launched	2003	2019	2015	2006
Target users	Private financial institutions (FIs) (primarily project financiers)	Financial institutions and corporations	Companies providing information to investors, lenders, insurers, and other stakeholders	Asset owners, investment managers, or service providers
Signatories (as of Dec 2019)	101 financial institutions in 38 countries	35 financial institutions including leading Chinese banks	Over 930 organizations	Over 2,699 organizations
Guiding principles	• Review and Categorization • Environmental and Social Assessment • Applicable Environmental and Social Standards • Environmental and Social Management System and Equator Principles Action Plan • Stakeholder Engagement • Grievance Mechanism • Independent Review • Covenants • Independent Monitoring and Reporting • Reporting and Transparency	• Embedding sustainability into corporate governance • Understanding Environmental, Social, and Corporate Governance (ESG) risks • Disclosing environmental information • Enhancing communication with stakeholders • Utilizing green financial instruments • Adopting green supply chain management • Building capacity through collective action	• Disclose the organization's governance around climate-related risks and opportunities • Disclose actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy, and financial planning, where such information is material • Disclose how the organization identifies, assesses, and manages climate-related risks • Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities, where such information is material	• Incorporate ESG issues into investment analysis and decision-making • Be active owners • Seek appropriate disclosure • Promote Principles within the industry • Collaborate in implementing the Principles • Report
Key features	• Played a vital role in driving the banks to focus on environmental and social/community standards and responsibility in project financing. • Signatories must confirm that their Equator Principle–compatible projects comply with applicable host country environmental laws, as well as the IFC Environmental and Social Performance Standards and the World Bank Environmental, Health, and Safety Guidelines.	• Extends beyond project financing and puts a spotlight on lending to the Belt and Road countries • Chinese banks' participation.	• Provides a systemic guide for corporations and FIs to assess and disclose their climate-related risks (physical and transition) as well as opportunities (policy and legal, technology, market, and reputational).	• World's leading scheme of incorporating ESG into investment decisions.

Appendix 3: Mapping Key Standards, Frameworks, and Initiatives on Environmental and Climate Risks of Financial Sector

Theme	Issuer/Source
International organizations/ intergovernmental	Organisation for Economic Co-operation and Development (OECD) Network of Central Banks and Supervisors for Greening the Financial System (NGFS) G20 Sustainable/Green Finance Study Group Green Climate Fund (GCF) International Organization for Standardization (ISO) – TC 322, TC207, DIS 14030 Multilateral Development Banks–International Development Finance Club (MDBs–IDFC) Common Principles for Climate Finance Tracking
Sustainable finance principles and frameworks	Loan Market Association (LMA) – Green Loan Principles (GLP) International Capital Market Association (ICMA) – Green Bond Principles (GBP) Portfolio Decarbonization Coalition (PDC) Global Sustainable Investment Alliance (GSIA) Climate Action 100+ Equator Principles Green Investment Principles for the Belt and Road (GIP) UN Principles for Responsible Investment (PRI) CERES Sustainable Banking Network (SBN) Sustainable Stock Exchanges (SSE) The Corporate Forum on Sustainable Finance The Global Green Finance Council (GGFC) Institutional Investors Group on Climate Change (IIGCC) Climate Resilience Principles Environmental Risk Management Initiative for China's Overseas Investment
Climate-Related Accounting/ Disclosure	CDP (formerly Carbon Disclosure Project) Task Force on Climate-Related Financial Disclosures (TCFD) Accounting for Sustainability (A4S) Climate Disclosure Standards Board (CDSB) Global Reporting Initiative (GRI) Sustainability Accounting Standards Board (SASB)
Green/Brown taxonomies	Green Climate Bonds Standard and Certification Scheme (Climate Bonds Initiative, CBI) EU Taxonomy on Sustainable Finance Chinese taxonomies (NDRC Green Industry Guidelines 2019, PBOC Green Bond Endorsed Project Catalogue 2015, CBIRC/PBOC Green Credit Accounting and Reporting Frameworks 2013) Eligible Project Categories (Based on MDBs-IDFC Common Principles 2015) ASEAN taxonomy French definitions Netherlands definitions Japanese definitions Deutsche Bank Climate Change Investment Universe (plus other FIs) Brown/Exclusion List Moody's Environmental Risks Global Heatmap SASB's Materiality Map Negative screening/Exclusion List from MDBs and asset owners

Appendix 3: Mapping Key Standards, Frameworks, and Initiatives on Environmental and Climate Risks of Financial Sector (cont.)

Theme	Issuer/Source
Green evaluators/Rating	ERM Vigeo Eiris Moody's CICERO ISS-oekom Trucost Sustainalytics S&P ratings Envision Rating System
NGOs	Climate Bonds Initiative 2 Degrees Investing Initiative World Resources Institute (WRI) World Wildlife Fund (WWF)
Green indices	Equity FTSE Russell ESG Ratings FTSE CDP Carbon S&P Eco Bloomberg Clean S&P Carbon Efficient MSCI Global Climate Index DJ Sustainability HSBC Climate Wilderhill New FTSE4Good Series MSCI ESG / SRI NASDAQ OMX Markit Carbon Debt Bloomberg Barclays MSCI Green Bond Index BAML Green Bond Index S&P Green Bond Index/S&P Green Bond Select Index ChinaBond China Green Bond Index/ChinaBond China Green Bond Select Index

List of sector-specific tools

Crosscutting	WRI: Resource Watch CEDRIG tool (Climate, Environment, and Disaster Risk Reduction Integration Guidance) of the Swiss Development Corporation SASB Good Practice Standards Global Circulation Model, GCM) Downscaled Data Portal Natural Capital Protocol Toolkit/Finance Sector Supplement International Association for Impact Assessment: Social Impact Assessment Guidelines GIIN IRIS (Impact Reporting Metrics): https://iris.thegiin.org GIZ: Climate Finance Training for Sector Experts (CliFiT4SE) World Bank Safeguard Policies/New Environmental and Social Framework World Bank Environmental, Health, and Safety (EHS) Guidelines
Climate mitigation/Adaptation	Paris Agreement Capital Transition Assessment, Portfolio Transition Initiative EU Climate Adapt: GRaBS Assessment Tool World Bank Climate Change Knowledge Portal USAID Climate Risk Screening and Management Tools African Development Bank Climate Screening and Adaptation Review and Evaluation procedures IRI Climate Data Library Climate Action in Megacities: C40 Cities Baseline and Opportunities WRI/WBCSD: Greenhouse Gas Protocol Cross-Sector Tools, Sector-Specific Tools, Additional Guidance Documents and Customized Calculation Tools CDP: Company disclosure tracker
Infrastructure	Envision rating system, Harvard University Global Infrastructure Basel Foundation (GIB) - SuRe Standard for Sustainable and Resilient Infrastructure SOURCE, Sustainable Infrastructure Foundation (SIF) IISD: Sustainable Asset Valuation (SAVi) tool Guidelines of Sustainable Infrastructure for Chinese International Contractors (SIG)

Appendix 3: Mapping Key Standards, Frameworks, and Initiatives on Environmental and Climate Risks of Financial Sector

Theme	Issuer/Source
Agriculture, forestry, biodiversity, and land use	Food and Agriculture Organization (FAO): Climate risk assessment and management in agriculture FAO: GAEZ Agri tool data portal FAO: FAOSTAT ITC Standards Map: http://www.standardsmap.org ISEAL Alliance: http://www.isealalliance.org/our-sectors Climate and Community and Biodiversity Alliance: http://www.climate-standards.org Forest Stewardship Council (FSC): https://us.fsc.org Canadian Standards Association: http://www.csasfmforests.ca Programme for the Endorsement of Forest Certification: http://www.pefc.org Sustainable Forestry Initiative: http://www.sfiprogram.org The Nature Value Explorer, IPBES Forest Information System World Bank Terrestrial Biodiversity Database ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) EU REDD Facility/CPI: Land-use Finance Toolbox Climate Bonds Agriculture Standard Climate Bonds Forestry and Land-use Standard
Energy	UNEP FI: Energy Efficiency Finance Platform WRI: Energy Access Explorer World Commission on Dams Report (2000) Hydropower Sustainability Assessment Protocol RSAT (Rapid Basin-wide Hydropower Sustainability Assessment Tool) IFC Hydroelectric Power: A Guide for Developers and Investors World Bank Hydro resilience tool World Bank Global Wind Atlas World Bank Global Solar Atlas Sustainable Energy Market Place, International Renewable Energy Agency (IRENA) Global Atlas 3.0 for Renewable Energy, International Renewable Energy Agency (IRENA) Climate Bonds Hydropower Standard Climate Bonds Wind, Solar and Geothermal Standard
Water and water infrastructure	WWF Water risk filter WRI Aqueduct atlas WBCSD Water tool Climate Bonds Water Standard
Chinese guidelines/Tools	CHINCA Guidelines for overseas sustainable infrastructure projects of Chinese Enterprises Social Responsibility of Foreign Mining Investment and Due China Minmetals Chemical Import and Export Chamber of Commerce, Diligence Management of Supply Chain China Textile Industry Federation, Social Responsibility Management System of Textile and Garment Enterprises (CSC9000T) Reference Manual for Environmental Risk Management of China's Foreign Investment ICBC, Research and Application of Environmental Stress Testing GIZ, Drought Stress Testing Tianjin Green Supply Chain Service Center, Green Purchasing Tools TNC, Eco-friendly Development System Planning Tool WRI, Aqueduct Water Risk Atlas Renmin University Eco-Finance Research Center, Sustainable Purchasing Tool for Infrastructure Construction

Source: Authors' compilation.

Appendix 4: Comparison of Leading Green Taxonomies

	Climate Bonds Standards (CBS)	EU Taxonomy on Sustainable Finance	MDBs-IDFC Common Principles 2015 (Eligible Project Categories)	NDRC Green Industry Guiding Catalogue 2019 (China)	PBOC Green Bond Endorsed Project Catalogue 2015 (China)
Guiding principles	• Paris Agreement alignment, substantial contribution to climate change mitigation and adaptation	• 6 environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to circular economy, pollution prevention and control, protection and restoration of biodiversity and ecosystems • Principles of "Substantial Contribution" and "Do No Significant Harm"	• Project reporting must happen before board approval or financial commitment • Climate finance tracking is independent of greenhouse gas (GHG) accounting reporting in the absence of a joint GHG methodology.	• Pollution prevention and control • Promoting green industry development	• Ensure robustness of the green bond market • 6 environmental objectives: energy saving, pollution prevention and control, resource conservation and recycling, clean transportation, clean energy, and ecological protection and climate change adaption, without specification of the interconnections between objectives
Key users	• institutional investors and issuers of debt instruments (bonds, loans)	• Financial market participants, mainly investors	• MDBs and DFIs	• Policymakers and industries	• Green bond issuers and investors
Classification	• Asset-based instead of activity-based • 8 main sectors with largest mitigation potentials	• European statistical classification of economic activities (EU NACE code)	• Activity-based instead of purpose- or result-based	• China Industrial Classification and Codes for National Economic Activities	• China Industrial Classification and Codes for National Economic Activities
Screening Criteria	• Technology agnostic • Compatibility to climate mitigation and adaption targets • Excludes fossil fuel activities • Adaptation and resilience are part of each category • Energy performance improvement is part of each category • Climate Bond Certification is more stringent and is based on sector-specific criteria	• Technology and product agnostic • Principles to define economic activities with substantial contribution to environmental objectives, in particular to climate change objective • Specific and quantitative carbon emissions threshold • Excludes fossil fuel activities without carbon capture	• No carbon emissions threshold and fossil fuels not excluded	• Incorporate ESG issues into investment analysis and decision-making • Be active owners • Seek appropriate disclosure • Promote Principles within the industry • Collaborate in implementing the Principles • Report	• No carbon emissions threshold and fossil fuels not excluded

Source: Authors' compilation.

Note: IDFC = International Development Finance Club; NDRC = National Development and Reform Commission of the People's Republic of China; PBOC = People's Bank of China; GIP = Green Investment Principles for the Belt and Road.

Appendix 5: Task Force on Climate-Related Financial Disclosures' Four Core Reporting Elements

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures			
a) Describe the board's oversightof climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
• b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2-degree or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and against targets.

Source: TCFD, 2017.

Appendix 6: Summary of Tools Dedicated to Natural Capital

Function	Description	Detailed Tools
Biodiversity footprint tool	Biodiversity footprint tools help assess the impact generated by an economic activity on biodiversity, for purposes of reporting and/or strategic management.	Product Biodiversity Footprint (PBF) Biodiversity Footprint for Financial Institutions (BFFI) Global Biodiversity Score (GBS) Biodiversity Impact Metric (BIM) Biodiversity Footprint Calculator (BFC) Bioscope
Mapping tools	Mapping tools show the location and differentiation of ecosystems, and sometimes of ecosystem services and their beneficiaries, at different scales and via spatial modeling software	BRI ERST (Environmental Risks Screening Tool) Integrated Biodiversity Assessment Tool (IBAT) Artificial Intelligence for Ecosystem Services (ARIES) Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST) Co$ting Nature
Qualitative and quantitative tools	Qualitative and quantitative tools help organizations to identify and describe their impact and their reliance on ecosystems and ecosystem services	Natural Capital Protocol Indicateur d'Interdépendance de l'Entreprise à la Biodiversité (IIEB) Corporate Ecosystem Services Review (ESR) Toolkit for Ecosystem Service Site-Based Assessment (TESSA)
Monetary tools	Monetary tools, like qualitative and quantitative tools, help organizations to define their impact and dependence on ecosystems and ecosystem services, but here the assessment takes the form of an economic valuation	Guide to Corporate Ecosystem Valuation Corporate Guidelines for the Economic Valuation of Ecosystem Services (GVces)
"Absolute" ecological performance tools	Unlike the other categories, these tools use an ecosystem perspective to promote ecological conservation. After defining the conditions necessary for ecosystems to function well, they help to set coherent private environmental objectives.	One Planet Approaches (OPA) Future Fit Business Benchmark Science-based Targets Network (SBTN)
Integrated Accounting tools	Integrated accounting tools, like conventional accounting tools, fall into two categories: microeconomic tools, which apply to organizations, and macroeconomic tools, which are intended for territories. Microeconomic integrated accounting tools aim at reporting on the use of natural capital (and in general other types of capital) by economic actors, and at improving its management. Depending on the tools, this reporting is carried out with varying degrees of integration into conventional financial accounting.	Integrated reporting Environmental Profit & Loss account (EP&L) Comprehensive Accounting in Respect of Ecology - Triple Depreciation Line (CARE - TDL) Ecosystem Natural Capital Accounts (ENCA) System of Environmental Economic Accounting (SEEA) Task Force on Nature-Related Financial Disclosures (TNFD)

Source: Authors' compilation.

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