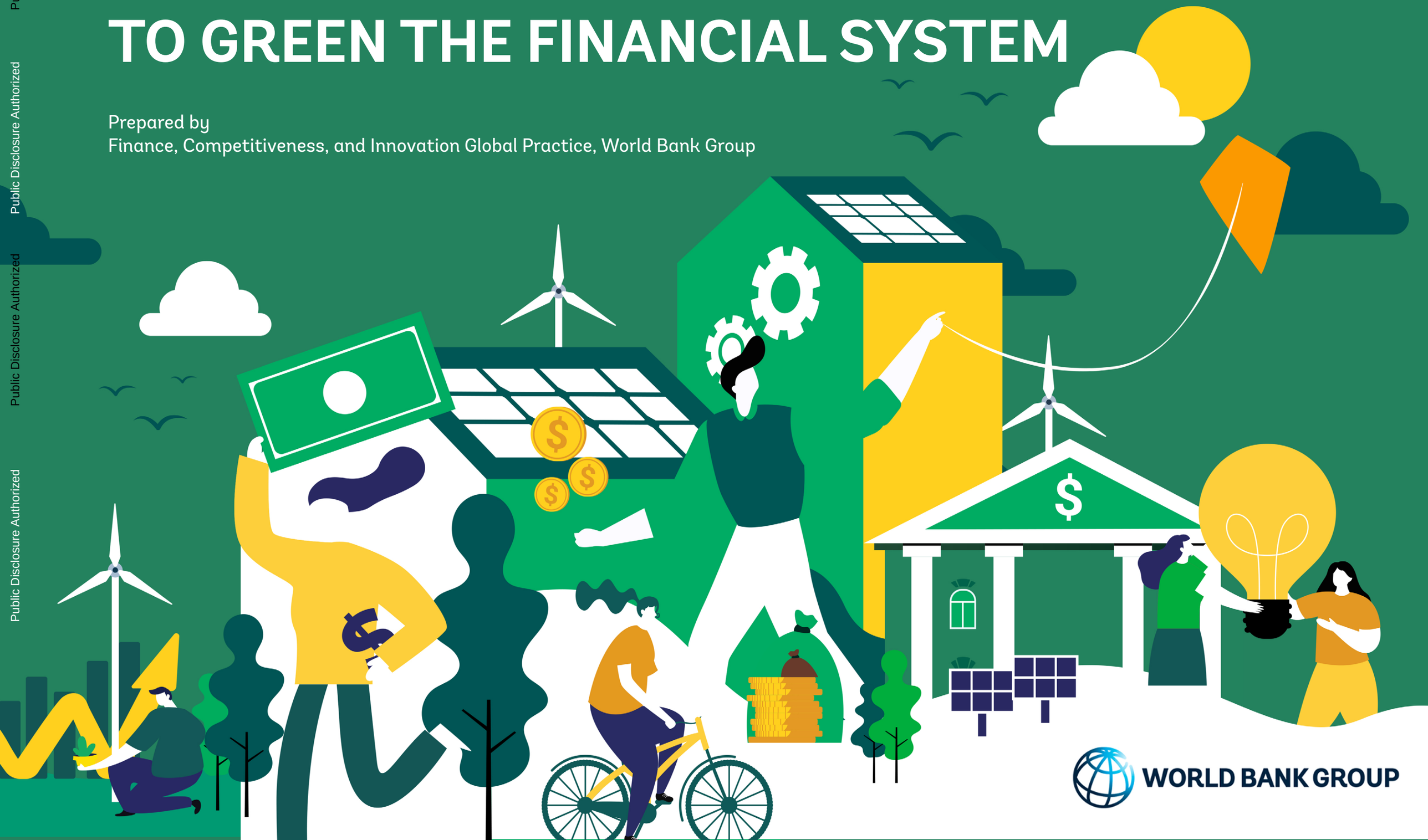
TOOLKITS FOR POLICYMAKERS TO GREEN THE FINANCIAL SYSTEM

Prepared by
Finance, Competitiveness, and Innovation Global Practice, World Bank Group



WORLD BANK GROUP

ACKNOWLEDGEMENT

The preparation of this report was led by the World Bank. The World Bank task team responsible for this report was composed of Emma Dalhuijsen, Martijn Regelink (team lead), Rachel Mok, Fiona Stewart and Henk Jan Reinders, and the report was developed under the guidance of Cedric Mousset and Jean Pesme. The report benefited greatly from the valuable contributions and perspectives of our colleagues in the climate change and green finance community, who have ensured its quality and clarity. These colleagues are listed in alphabetical order: Jonathan Coony, Nepomuk Dunz, Christopher Frankel, Louise Gardiner, Bryan Gurhy, Farah Imrana Hussein, Honglin Li, Klaus Opperman, Mohamed Rozani Bin Mohamed Osman, Cindy Paladines, Samantha Power, Dawn Slevin, Sandhya Srinivasan, Tao Wang and Rong Zhang.

PUBLICATION

1818 H Street NW, Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

Report design by Maria Lopez.

ABBREVIATIONS

ACRONYM	DEFINITION
AFD	Agence Française de Développement
ASEAN	The Association of Southeast Asian Nations
BIS	Bank for International Settlements
BCBS	Basel Committee on Banking Supervision
BNDES	Brazil's National Bank for Economic and Social Development
BSP	Bangko Sentral ng Pilipinas
CHUEE	China's Utility-Based Energy Efficiency Program
COP	Conference of the Parties
DBSA	Development Bank of Southern Africa
DFC	Development Finance Corporation
DMO	Debt Management Office
DNB	DeNederlandscheBank
ECB	European Central Bank
ESG	Environmental, Social, and Governance
ESRM	Environmental & Social Risk Management
FEBRABAN	Federação Brasileira de Bancos
FELABAN	Latin American Federation of Banks
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
GCF	Green Climate Fund

GEF	Global Environmental Facility
GHG	Greenhouse gas
I4CE	Institute for Climate Economics
IAIS	International Association of Insurance Supervisors
ICAAP	Internal Capital Adequacy Assessment Process
ICMA	International Capital Market Association's
IDB	Inter-American Development Bank
IFC	The International Finance Corporation
IFRS	International Financial Reporting Standards
IOPS	International Organization of Pension Supervisors
IOSCO	International Organization of Securities Commissions
MPA	Macroprudential Assessment
MI	Management Information
MLF	Medium-term Lending Facility
MRV	Measurement, Reporting, and Verification
NAP	National Adaptation Plan
NDB	National Development Banks
NDC	Nationally Determined Contributions
NEED	National Energy Efficiency Data-Framework
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NGO	Nongovernmental organization
OECD	Organization for Economic Co-operation and Development
ORSA	Own Risk and Solvency Assessment

PACTA	Paris Agreement Capital Transition Assessment
PBOC	People’s Bank of China
PCAF	Partnership for Carbon Accounting Financials
PRI	Principles for Responsible Investment
SASB	Sustainability Accounting Standards Board
SBN	Sustainable Banking Network
SDG	Sustainable Development Goal
SFN	Sustainable Financial Network
SIF	Sustainable Insurance Forum
SLF	Standing Lending Facility
SREP	Supervisory Review and Evaluation Process
SRI	sustainable and responsible investment
SSE	Sustainable Stock Exchanges Initiative
TCFD	Taskforce on Climate-related Financial Disclosures
TNFD	Taskforce on Nature-related Financial Disclosure
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
WRI	World Resources Institute

LIST OF FIGURES, TABLES & BOXES

CONTENT

BASIC TERMINOLOGIES

Climate finance refers to local, national, or international financing that is drawn from public, private and alternative sources to support mitigation and adaptation actions that will address climate change.

Financial institutions refer to financial sector firms including banks, pension funds, insurance companies, asset managers, brokerage firms and investment dealers.

Green finance includes all lending and investment that contributes to climate mitigation, climate adaptation and resilience, and other environmental objectives – including biodiversity management. The focus of the report is on climate change.

Greening the financial system refers to the role of all actors in the financial sector in (a) mobilizing investments and lending toward green goals and (b) managing climate-related and environmental risks.

Greenwashing is the practice of marketing financial products as green, when in fact they do not meet climate-related or environmental standards.

Industry association is an organization founded and funded by businesses that operate in a specific industry (e.g., banking, insurance, pension)

Long-term strategies outline a country's long-term climate plans. According to Article 4, paragraph 19, of the Paris Agreement, "all Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies". This strategy provides a pathway for linking short and medium-term climate goals with the long-term objectives of the Paris Agreement including to reach net-zero globally by 2050.

Nationally Determined Contributions (NDC) are a central element for implementing the Paris Agreement, and represents a country government's plan for national climate actions, including climate-related targets, policies, and measures.

Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on December 12, 2015 and entered into force on November 4, 2016.

Physical risks are financial risks resulting from the physical impact of climate change. This could include acute hazards (i.e., event-driven hazards, including more frequent and intense extreme events such as cyclones or heatwaves) and chronic hazards (i.e., long-term changes in climate patterns, such as temperature rise).

Public authorities cover government ministries or government agencies, as well as supervisors and central banks. This report targets financial policymakers (e.g., Ministries of Finance, central banks, as well as financial regulators and supervisors).

Transition risks are financial risks which can result from the process of adjustment toward a lower-carbon and more circular economy, prompted, for example, by changes in climate and environmental policy, technology, or market sentiment.

ABOUT THIS REPORT

The World Bank works with government policy makers, regulators, central banks, and supervisors in implementing reforms to build a sustainable financial system. Such reforms must align the financial system with the goals of the Paris Agreement on climate change and the Sustainable Development Goals (SDGs).

This report aims to provide a comprehensive overview of the range of approaches that public authorities could take to promote green finance and manage climate-related and environmental risks. The toolkits presented in this report aim to help countries set clear and predictable strategies, increase the attractiveness of green investments, and better understand and manage climate-related and environmental risks. Targeted financial public authorities may include Ministries of Finance or related government agencies, as well as central banks and financial supervisors/regulators.

The report is not designed to provide an in-depth analysis of each toolkit. Rather, it summarizes the key characteristics of each approach, provides key actions to drive implementation, and references other publications that provide more detailed guidance. The individual toolkits in this report are structured as follows, to ensure the usefulness and practicality of the recommendations:

1. **Goal** – to outline the main objective and expected outcome of the toolkit
2. **Definition** – to describe a common definition for the purpose of the toolkit
3. **Key stakeholders** – to identify public authorities that may be responsible for developing and implementing the toolkit. This may include key ministries or government agencies, central banks, and financial supervisors/regulators
4. **Rationale** – to explain why the toolkit is important
5. **Implementation considerations and checklist** – to provide steps for application to be considered at different phases (planning, implementation, monitoring and evaluation), and outline challenges that may emerge along the way
6. **Selected examples** – list of authorities or countries that have implemented the action described in the toolkit
7. **Resources** – links to relevant resources which provide more detailed information or inputs

This toolkit series builds on the World Bank's experience in supporting countries' national policy developments; pilots on climate-related and environmental risks and opportunities as part of its Financial Sector Assessment Program (FSAP); and previous work with the Principles for Responsible Investment (PRI) on a toolkit for sustainable investment policy and regulation. The previous toolkit, which was prepared jointly with PRI, provides a high-level overview of five foundational sustainable investment policies, namely corporate environmental, social and governance (ESG) disclosures; stewardship; investor ESG regulations; taxonomies; and national sustainable finance strategies.[1] The previous joint World Bank and PRI toolkit has been adapted for inclusion in this broader toolkit.

1. PRI and World Bank (2020), A Toolkit for Sustainable Investment Policy and Regulation

BACKGROUND

Why is greening the financial system important?

The transition to a low-carbon economy and the green recovery from the COVID-19 crisis presents a tremendous investment opportunity across both the developed and developing world. Supporting a green post-COVID recovery can generate more than $10 trillion in investment opportunities and create over 200 million jobs in emerging markets alone.[2] The global transition away from fossil fuels has been estimated as a $50 trillion opportunity.[3] At the same time, green finance globally is falling short of what is required to meet international and domestic climate and environmental objectives.

Despite these opportunities, green finance has not been able to reach the scale required, especially for the World Bank's client countries. This could be because of several institutional barriers inside and outside of the financial system. For example, in some countries, there is misalignment between financial sector policies and incentives for climate and environmental objectives. This includes subsidies for sectors that are not aligned with low-carbon pathways and lack of pricing of externalities. There could also be uncertainty regarding long-term government policy which in turn inhibits the development of a project pipeline; or limited motivation or capacity of financial institutions to identify and originate green assets and manage climate-related and environmental risks. Furthermore, the high upfront financing costs, transactions costs, lack of track record of new technologies, and long payback periods for some green projects could increase the real and perceived riskiness of green projects overall.

2. IFC (2021), Ctrl-Alt-Delete: A Green Reboot for Emerging Markets.
3. DW (2021), Davos: Green transition is '$50-trillion investment opportunity

Climate change and other environmental concerns could pose risks to financial systems and the economy. In the context of climate change, a rapid and unmanaged transition to a low carbon economy could translate into significant transition risks for the financial sector, especially if there is a need to drive a rapid transition toward green investments to meet climate goals; and financial institutions have large exposures to carbon-intensive and other transition-sensitive sectors. On the other hand, the physical impacts of climate change could also translate into risks for the financial sector. Not only would climate change, combined with other factors such as the COVID-19 pandemic and biodiversity loss, create new sources of risks for financial stability, the lack of understanding or awareness of climate risks by financial institutions could also delay the low carbon transition. Since the perceived level of risk has a direct impact on investment decisions, managing climate and environmental risks through financial supervision and increasing awareness can play an important role in changing financial behavior and driving capital towards green goals.

This report aims to provide a practical overview of actions that public authorities (especially financial policymakers, such as central banks, supervisors, and Ministries of Finance) could take to design a landscape that supports the achievement of climate and environmental objectives. Despite growing recognition of the role that the financial sector could play in reaching countries' climate and environmental goals, many countries, including the World Bank's client countries, still do not have a clear picture of the actual interventions required to green the financial system. Against this backdrop, these toolkits aim to provide practical, high-level guidance for public authorities that are exploring opportunities to green their financial sector. These toolkits are based on examples and best practices from countries' national policy developments. Many of these toolkits have already proven their effectiveness as catalyzers of green finance and risk management solutions in local markets. As the understanding of greening the financial system develops, the World Bank expects to update these toolkits over time. For example, there are certain market players (e.g., credit rating agencies and ESG data providers) that are important in influencing green finance, but there is limited policy experience to date that demonstrate how these players should be regulated. The World Bank will continue to monitor the green finance policy landscape to highlight the most relevant and current policy areas that may require further attention tfrom policymakers.

Box 1. What does it mean to green the financial system?

This report considers greening the financial system in the context of both risk and opportunity. In the context of opportunity, greening the financial system refers to increasing financing flows into sectors that contribute to climate and environmental objectives. In the context of risk, greening the financial system refers to the management of climate-related and environmental financial risks.

Green finance is a narrower term and refers to all lending and investment towards climate mitigation, climate adaptation and resilience, and other environmental objectives – including biodiversity management and nature-based solutions). Although the focus of the report is specifically on green finance, with an emphasis on climate change, it is important to note the relevance of the broader sustainable finance landscape. For emerging markets and developing countries in particular, the relevance of social issues is often intricately linked with climate and environmental objectives. However, it is beyond the scope of this report to provide a full assessment of the social aspects in the context of sustainable finance more broadly. The diagram below describes the differences in scope for "low-carbon", "climate", "green" and "sustainable" finance and how they relate to environmental, social and governance (ESG) factors (see Figure 1).

Figure 1. Scope of low carbon, climate, green and sustainable finance

Source: Adapted from UNEP

How should policymakers use the green finance toolkits?

The report provides a detailed and practical toolkit for each individual action to green the financial system. The specific implementation of these practical recommendations may differ depending on the local context, although recommendations should generally be applicable across countries at a high level.

The Theory of Change outlined in Figure 2 provides a high-level overview of the toolkits and their expected outcomes. The toolkits are part of a broader policy landscape that requires consideration of complex relationships and trade-offs. Different toolkits have different objectives, and together, the package of toolkits is expected to contribute to countries' long-term climate and environmental goals, as well as the overall stability of the financial system. In the long run, it is envisioned that the toolkits could reach beyond the financial sector. By changing the cost of capital, recognizing externalities and fixing market failures, the financial sector could act as a strong driver to change corporate behavior and transform the overall real economy towards green growth.

Although the 17 toolkits are presented independently to clearly present the different options available to public authorities, there are significant synergies between the toolkits. In some cases, it may be more effective to apply different toolkits together as a package, depending on a country's local context and priorities. For example, certain toolkits, such as those for creating a national platform on green finance or participating in national and international networks, could be a good place to start countries' green finance journey, and could be considered "cross cutting" toolkits.

Figure 2. Theory of Change

Create stable, sound, and transparent financial sectors

Mobilize capital towards green growth objectives

Alignment of financial policies and incentives with sustainable development/climate goals

Enhance understanding and awareness of climate/environmental risks and opportunities

Improve stability and soundness of the overall financial system. Catalyst to change behavior of financial institutions to accelerate the low-carbon transition

Increase transparency and long-termism in the financial system

Improve risk-adjusted returns of green investments, support policy reforms, and catalyze new markets for green growth

STRATEGY AND COORDINATION

1. Develop a green finance roadmap for the financial sector
2. Develop a national climate finance strategy
3. Create a national platform or taskforce on green finance

BUILD SKILLS AND CAPABILITIES

4. Participation in green finance-related international networks
5. Support financial institutions' commitments to align with the Paris agreement

FINANCIAL REGULATION AND CENTRAL BANK ACTIVITIES

6. Conduct climate-related and environmental risk assessment
7. Incorporate climate-related and environmental risk into supervisory practice
8. Issuing supervisory guidance on climate-related and enviornmental financial risk
9. Exploring greening of central banks' activities

INCREASING TRANSPARENCY

10. Develop and implement climate-related and environmental disclosure and reporting standards
11. Develop and adopt a national green taxonomy

GREEN(ING) FINANCIAL INSTITUTIONS

12. Greening a national development bank or other domestic public finance institution
13. Create a national green finance entity or green bank

GREEN FINANCIAL TOOLS AND INSTRUMENTS

14. Stimulate corporate green bond issuance
15. Issue green sovereign bonds
16. Promote use and development of blended finance products for green finance purposes
17. Stimulate origination of green loans or sustainability-linked loan products

The toolkits presented are diverse in nature and could take a top-down approach (driven at the regulatory/legislative level) or a bottom-up approach (driven at the market/financial institution level). The toolkits could therefore be driven by different public authorities or private stakeholders, such as line ministries, central banks, or the investment community. Figure 3 below indicates the potential stakeholders that could be involved in the development of different toolkits, although this may vary on a case-by-case basis.

Careful consideration of national circumstances and priorities will be key to choosing the most appropriate toolkit and implementation approach. Public authorities should have a good understanding of what specific local barriers to green finance they are trying to tackle in order to prioritize the toolkits that may be best tailored to local context. For example, in many emerging market and developing economies, the banking sector is of particular importance so it may be important to prioritize toolkits that target banks. On the other hand, in some emerging market and developing economies, capital markets may be relatively underdeveloped. This could present a unique opportunity for authorities to integrate green elements at the outset, as they look for ways to expand their capital markets. In general, consultations, modelling and analytical work will be important to ensure that local circumstances are carefully considered when selecting and implementing toolkits. Authorities could consider taking a phased approach to test different toolkits at a smaller scale to assess the utility and feasibility of the approach before applying the intervention at scale. As markets mature, public authorities' selection and implementation of these toolkits should also progress over time.

Figure 3. Indicative stakeholder mapping for different toolkits (may differ based on local context)

Strategy and Coordination	**Green Finance Roadmap** Key line ministries (e.g., finance, environment), Central Bank	**National Climate Finance Strategy** Key line ministries (e.g. finance, environment, energy), Central Bank		
Build Skills and Capacity	**National Platform/Taskforce on Green Finance** Ministry of Finance, Central Bank, financial regulator/ supervisor, industry associations	**International Networks** Ministry of Finance, Central Bank, supervisory authority, financial regulator/supervisor	**Paris Alignment by FIs** Ministry of Finance, financial regulator/supervisor, industry associations	
Financial Regulation and Central Bank Activities	**Climate-Related Risk and Environmental Risk Assessment** Ministry of Finance, central banks, financial regulator/ supervisor, other experts/stakeholders	**Climate-Related and Environmental Supervisory Practice** Central Bank, financial regulator/supervisor	**Supervisory Guidance on Climate-Related and Environmental Financial Risks** Central Bank, financial regulator/supervisor	**Exploring Greening of Central Banks' Activities** Central Bank
Increasing Transparency	**Climate-Related and Environmental Disclosure and Reporting Standards** Ministry of Finance, Central Bank, financial regulator/supervisor	**Green/Sustainable Taxonomy** Key line ministries (e.g., for finance and environment), Central Bank, other experts/stakeholders		
Green(ing) FIs	**Greening NDBs/other public FIs** Key line ministries (e.g., finance, development, environment), NDBs, other public FIs	**National Green Finance Entity or Green Bank** Key line ministries (e.g., finance, development, environment)		
Green Financial Tools and Instruments	**Stimulate Corporate Green Bond Issuance** Capital market regulatory authority, industry associations	**Originate Green Sovereign Bonds** Key line ministries (e.g., finance, development, environment)	**Promote Blended Finance Products** Key line ministries (e.g., finance, development, environment), NDBs or other public FIs	**Stimulate Green/ Sustainability-Linked Loan** Ministry of Finance, NDBs, other public FIs

Given the rapidly evolving landscape of green finance, it is envisioned that this report could be updated over time based on international best practices to provide up-to-date information on green finance toolkits[4]. The report is intended to provide practical toolkits in order to facilitate dialogue across different stakeholders and drive action on critical green finance-related issues. However, the toolkits presented in this report may not cover all approaches for greening the financial system, nor are they intended to provide an in-depth analysis on each toolkit. Instead, this report summarizes good practices based on international experience, standards, and guidelines, such as those issued by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), the Taskforce on Climate-related Financial Disclosures (TCFD) or international standard setting bodies. It is also envisioned that the toolkits could be updated over time as understanding develops and new good practices emerge. The ultimate objective is to help countries develop a robust enabling environment to catalyze finance to support international and domestic green growth objectives as well as build financial sector resilience to climate-related and environmental risks.

How should the green finance toolkits be considered in the context of the broader policy package?

The toolkits presented in this report will only be effective, if they are part of a coordinated and complementary policy package. A prerequisite for the success of the individual toolkits is a conducive regulatory environment and alignment of financial sector policies with green growth objectives. It is imperative to review the broader policy framework to ensure the right conditions are in place and the toolkits' effectiveness is not inhibited. Figure 4 describes how the toolkits should be aligned with other policies and interventions that are beyond this report's scope, including but not limited to:

Alignment of fiscal, economic, climate and environmental policies – Policies need to provide the right incentives for financial sector players to direct or reallocate financing to support the transition. This includes ensuring that externalities are adequately priced (e.g., through carbon pricing instruments). In some cases, the financial sector may in fact be actively participating in carbon pricing instruments (e.g., more advanced emission trading schemes). Alignment with other types of economy-wide or sector-specific policies that contribute to climate and environmental goals will be equally important. In addition, authorities must ensure that incompatible (e.g. fossil fuel subsidies) or contradictory policies (e.g. continued financial support for high-carbon sectors, while subsidizing renewable energy) are identified and addressed, to ensure alignment and avoid wasting limited resources. Policymakers should introduce long-term policies and pass dedicated climate laws or regulation to signal their commitment to the low-carbon transition and offer certainty to investors and other relevant actors.

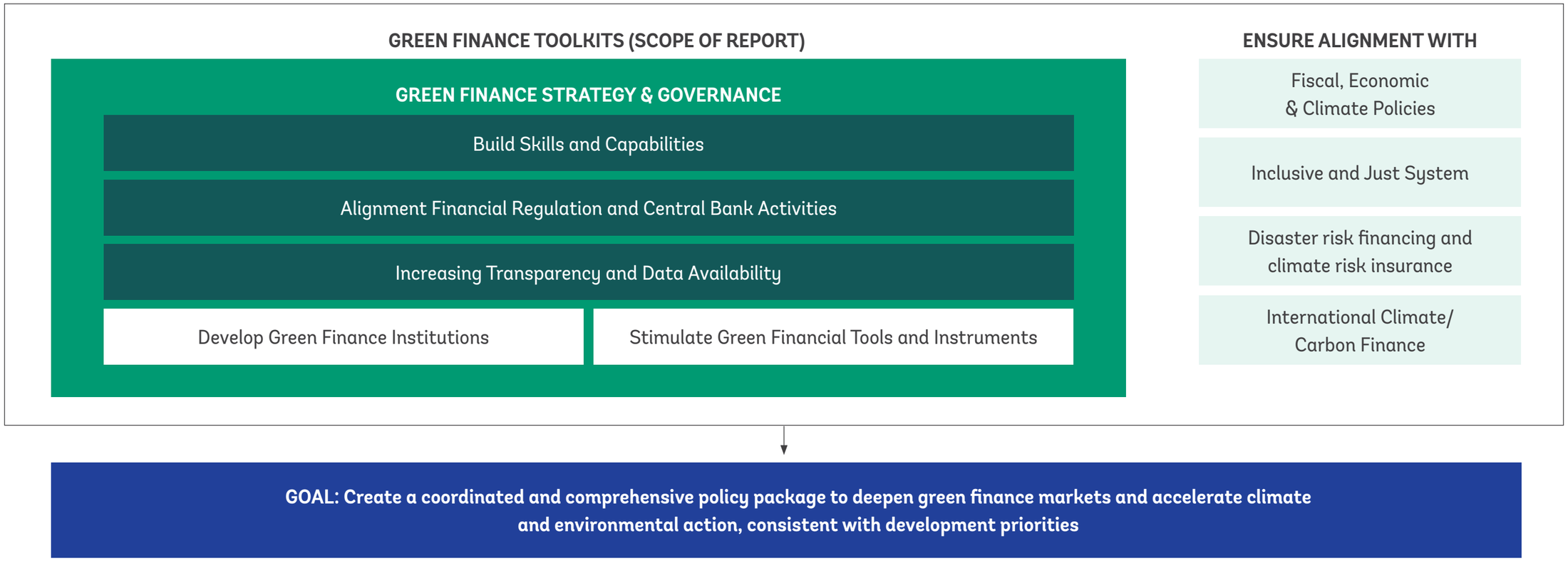
Policies to promote an inclusive and just system – A sudden and rapid transition towards a low carbon and environmentally resilient economy could create social conflict and economic distress. A carefully managed, sustained, and long-term approach is therefore required to ensure that people's livelihoods and communities are protected.

Disaster risk finance and climate risk insurance – Disaster risk finance, which is primarily funded through public resources, aims to address the fiscal impacts and economic losses caused by natural hazards to support countries in their efforts to increase financial resilience to natural disasters. An effective safety net to climate-induced disasters should be accompanied by the development, access, and use of climate risk-related financial instruments, including (private) insurance, in order to increase the financial resilience of economies and households to climate risks. It should be noted that the private insurance sector's role in mitigating the financial impacts from climate change and natural disasters is not specifically discussed in this report.

International climate finance – International climate finance (in the context of public bilateral or multilateral sources) plays an important role in facilitating large-scale investments required for climate mitigation and adaptation. Broadly speaking, there are two types of international climate finance. Upfront or activity-based climate finance is made available in the early stages of the project cycle, for example through grants, concessional loans, equity, and guarantees. Examples of upfront climate finance from public sector sources include the Global Environmental Facility (GEF) and Green Climate Fund (GCF). Results-based financing, on the other hand, disburses funds to a recipient upon the achievement and independent verification of a pre-agreed result.

4. For example, this report was prepared while the IFRS global sustainability reporting standards were being launched, which explains why it is not explicitly covered. See also box 4.

Figure 4. Considering toolkits in the context of a coordinated policy package



TOOLKIT

Develop a Green Finance Roadmap for the Financial Sector

GOAL

Align financial sector policies, regulations, and incentives with national environmental and climate goals.

DEFINITION

Document outlining the long-term strategic direction to green the overall financial system and developments needed to advance the countries' green finance agenda. Other common terms used to describe this toolkit include green finance "strategy" or "action plan".

KEY STAKEHOLDERS

Ministry of Finance, Ministry of Environment, central bank, other relevant ministries, and other regulators responsible for finance and climate-related policies

RATIONALE

Green finance roadmaps can provide the strategic framework to enable or accelerate a country's ability to deliver on its climate and sustainable development goals, while enhancing the financial sector's competitiveness and economic resilience[5]. A roadmap can help prioritize actions and coordinate activities across different stakeholders involved, including financial and environmental policymakers at the national and regional level, supervisors, regulators and sector participants.

5. See for example the United Kingdom's Green Finance Strategy, which specifically sets out the objective of "cementing the UK's leadership in green finance, through e.g. consolidating the UK's position as a global hub for green finance".

IMPLEMENTATION CONSIDERATIONS

Developing a system-wide green finance roadmap will involve many different parties. Clear engagement mechanisms and effective stakeholder management will therefore be imperative. The roadmap should clearly define the objectives (e.g., objectives related to climate change, environmental or sustainable development more broadly); specify the roles and responsibilities to achieve different objectives; and lay out actions that should be taken by different actors to ensure the roadmap's adequate implementation. The roadmap should pay attention to possible synergies and trade-offs between objectives in the financial sector and environmental policy areas. Furthermore, it is important to gain support from the general public as well as address concerns, such as those related to fears of job losses and the unequal distribution of costs or benefits. Therefore, it is relevant to carry out a country-specific analysis, assessing the potential trade-offs and co-benefits which may arise.

The exact components of the roadmap should be tailored to local conditions. Some countries may want to develop a roadmap which covers sustainable finance in the broader sense (e.g., also considering social elements). Several key components should be considered for the design of any roadmap. First, the roadmap should give due consideration to both the supply and demand of green finance and ensure alignment with relevant climate or environmental objectives, such as the Nationally Determined Contributions (NDCs) and the Long-Term Low Emission Development Strategy[6]. Critically, public authorities need to understand the prevailing incentives and behaviors within the financial sector, and the roadmap should recognize the interconnectedness of the overall financial system and as such, cover all different areas of the financial system, including banking, insurance, institutional investors and capital markets. The roadmap should also explicitly set out expectations for the different financial regulators and policymakers implicated in the delivery of the roadmap's objectives. Public authorities could consider carrying out a climate-related and environmental risk assessment (toolkit 6) to better understand national priorities and circumstances.

It is important to ensure that the level of ambition to cover a wide range of topics does not delay or hamper the development of the roadmap. Different country roadmaps can cover different levels of detail but be equally useful starting points to drive the green finance agenda.

6. Long-term strategies outline a country's long-term climate plans. According to Article 4, paragraph 19, of the Paris Agreement, "all Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies". This strategy provides a pathway for linking short and medium-term climate goals with the long-term objectives of the Paris Agreement including to reach net-zero globally by 2050.

CHECKLIST

PHASE 1 - PLANNING

- Identify relevant stakeholders for the development of the roadmap and set up adequate governance and engagement mechanisms. Beyond public authorities, stakeholders may include the private sector, academics, civil society groups and other experts.
- Set up a taskforce responsible for the development of the roadmap, with representation from key ministries, regulators and supervisors (see toolkit 3)
- Identify initial green and climate-related objectives (and possibly SDGs more broadly) to be covered by the roadmap
- Carry out a gap analysis to identify the main shortcomings in the financial system to help meet national climate objectives and respond to climate-related risks
- Identify the key barriers to implement the roadmap. These may include lack of resources or capacity, and challenges in institutional coordination across different stakeholders.

PHASE 2 - IMPLEMENTATION

- Based on international experience, global good practices, and a country-specific assessment, analyze and compare different financial sector actions to address identified gaps.
- Select and prioritize short- and long-term actions to be taken by different actors within the financial sector, considering different factors, such as feasibility, (cost-)effectiveness and efficiency of implementation.
- Decide on key objectives and translate objectives into practicable actions for public authorities (e.g., financial regulators) and the private sector (e.g., asset managers or banks)
- Define prioritization of actions in the roadmap
- Assess how resources can be made available to implement the roadmap
- Publish and promote the roadmap to signal policy commitment and enable investor certainty
- Where relevant, establish working groups to drive implementation of the roadmap
- Aim to translate NDC and other climate and environmental goals into specific investment objectives to be published alongside the roadmap

PHASE 3 - MONITORING & EVALUATION

- Monitor and evaluate the implementation of the roadmap over time, and update where relevant new policies or developments emerge

SELECTED EXAMPLES

COUNTRY	INITIATIVE
Australia	Sustainable Finance Initiative (2020)
China	Guidelines for Establishing the Green Financial System (2015)
European Union	Action Plan for Financing Sustainable Growth (2018, Last updated in 2020)
Georgia	Roadmap for Sustainable Finance in Georgia (2019)
Indonesia	Roadmap for Sustainable Finance (2015) and Sustainable Finance Roadmap Phase II (2021-2025)
Mongolia	National Sustainable Finance Roadmap of Mongolia (2018)
Nigeria	Nigerian Sustainable Finance Roadmap (2018)
Norway	Roadmap for green competitiveness in the financial sector (2018)
South Africa	Financing a sustainable economy – Technical Paper 2020 (2020)
United Kingdom	UK Green Finance Strategy: Transforming Finance for a Greener Future (2019)

RESOURCES

- UN Environment and World Bank (2017) Roadmap for a Sustainable Financial System
- UNEP Inquiry (2015) The Financial System we need: Aligning the financial system with sustainable development

TOOLKIT

Develop a National Climate Finance Strategy

GOAL

Define how the required short and long-term financing will be mobilized to implement climate objectives and facilitate a country's transition to a low-carbon, climate-resilient economy. The strategy is intended to cover climate finance required for various sectors, so the scope is much broader than greening the financial system.

DEFINITION

In this context, climate finance refers to local, national or international financing that is drawn from public, private and alternative sources to support mitigation and adaptation actions that will address climate change. A climate finance strategy is an overarching strategy, which defines how the implementation of a country's short and long-term climate goals, in particular its NDC and Long-Term Strategy, will be financed (covering public, private, domestic and international sources of finance).

KEY STAKEHOLDERS

Key line ministries (e.g., Ministry of Finance, Environment, Infrastructure, Energy, Agriculture) and other relevant policymakers

RATIONALE

The process of defining a clear and actionable climate finance strategy is instrumental in delivering scaled investment to support the implementation of national climate plans. The strategy needs to ensure that over the long term, the public and private sectors can meet the required investment to respond to a country's climate mitigation and adaptation needs. The strategy should clearly define the role of the private sector, and articulate how climate objectives can be

mainstreamed into common financial sector policies and planning practices, such as through national budgeting[7], risk management and investment processes. The strategy should clearly articulate whether changes in financial sector regulation are needed to address financial sector market failures, such as missing or incomplete consideration and pricing in of climate risks and opportunities.

The strategy should provide clarity on how private sector financing could be mobilized intelligently to meet a country's climate goals, and through which financial institutions and instruments, in light of the limited public and concessional funding available. The strategy should be considered in the context of a country's broader development plan and the interaction with other sustainable development and environmental objectives. In some cases, the climate finance strategy could be part of a broader national climate change strategy, which describes a country's climate action plan across key sectors. A climate finance strategy is different from the roadmap in that it does not focus on the broader policy landscape for the financial sector. Instead, a climate finance strategy specifically assesses the investment gaps for a country to achieve its NDC, Long-term Low GHG Emission Development Strategy as defined under the Paris Agreement, or other climate objectives, and describes key actions and plans to address these investment needs. While the design and application of the strategy could vary across countries, one potential use of the climate finance strategy may be to inform estimates on resource required to achieve a country's unconditional and conditional NDC targets.

Designing a climate finance strategy involves robust, inclusive, and iterative engagement with key stakeholders to understand their roles and requirements for delivering adequate and predictable financial resources to meet a country's climate goals. A detailed and ambitious climate finance strategy could provide guidance on green recovery spending in the aftermath of the COVID-19 crisis. This is a unique opportunity to ensure that the recovery measures are future-proof, contribute to low-carbon development and enhance a country's resilience against climate change.

7. For example, authorities could refer to the Climate Public Expenditure and Institutional Review (CPEIR) process, which seeks to mainstream climate change into the national budgeting and planning process.

IMPLEMENTATION CONSIDERATIONS

A climate finance strategy should address the following three main areas: public sector support; the role of the private sector; and the international climate finance landscape. Public sector support includes policy incentives, direct public finance support through taxes and subsidies, national development banks (NDBs), other domestic public financial institutions, and the national budget. Private sector finance refers to financing provided by businesses and investors that are for profit and are not state controlled. There are two broad types of international climate finance (in the context of public bilateral or multilateral sources). Upfront or activity-based climate finance, such as those provided by the Global Environmental Facility and the Green Climate Fund, is typically made in the early stages of the project example. Results-based financing disburses funds to a recipient upon the achievement and independent verification of pre-agreed results.

Designing a climate finance strategy can be a substantial and challenging exercise. Its success will depend on the commitment of a broad range of stakeholders. There should also be clarity on which government ministries or agencies will lead the development process of the strategy, which could vary depending on the country's preference and circumstances. The development process has many different facets, most of which are interconnected. Therefore, some of the steps described below may happen simultaneously or in a different order. When designing the strategy, several additional underpinning principles should be considered. These include the effectiveness, predictability and transparency around decision making and implementation. In particular, it should aim to be inclusive and strive to deliver a just transition. The climate finance strategy will need to be iterated over time as insights, technologies, or priorities develop.

The financing strategy should also prepare for the development of tailored investment programs, delivering a pipeline of projects to attract capital at scale to meet its objectives. A clear project pipeline would provide private and international climate finance providers with clarity and confidence regarding the priorities and actions of the national government. A key role for authorities is therefore to identify a pipeline of bankable projects that may require financial support for implementation. Where these projects do not yet exist, authorities should invest in the preparation of a project pipeline. Since project pipelines rely on the broader investment climate and sector conditions (e.g., land acquisition hurdles for infrastructure projects), authorities should also consider what domestic policy and regulatory interventions may be required to stimulate project development.

Recognizing that resources are limited, a clear prioritization of the investment needs will be required, considering different factors such as abatement potential, costs and market or technological feasibility of different sectors and technologies. Climate-related scenario analysis[8] may support countries in determining potential outcomes based on which financing objectives can be set. Similarly, financing scenarios can provide a useful basis to assess different ways to allocate domestic and international public resources, and the potential role for the private sector. Another important element to consider is to develop a measurement, reporting and verification (MRV) framework[9] for tracking finance flows, including in the context of public and private finance as well as domestic and international finance. By having an MRV framework to transparently track financing flows, authorities can more adequately identify investment needs, and develop a plan to enable greater access to and mobilization of different financing sources to meet the country's climate adaptation and mitigation goals.

8. For example, the World Bank (Macroeconomic, Trade and Investment; Energy and Extractives; and Climate Change Practices) support various climate modelling tools to facilitate decision making (e.g., the India Energy Security Scenarios, 2047). The World Bank is also developing a series of Country Climate and Development Reports, which is expected to include climate scenario analysis.
9. The MRV system only tracks climate finance, not the broader environment-related finance flows.

CHECKLIST

PHASE 1 - PLANNING

- Allocate responsibility for the development of the climate finance strategy to the adequate body/ministry and set up governance arrangements
- Set out a stakeholder engagement strategy for public, private, and international providers of climate finance
- Define the process to assess and quantify the investment need and financing gaps required to meet NDC and other climate goals
- Ensure due consideration is given to specific mechanisms to finance adaptation and resilience in addition to mitigation

PHASE 2 - IMPLEMENTATION

- Carry out country-specific analysis to assess financing requirement to meet the country's climate goals
- Conduct climate-related and financial scenario analysis to determine financing pathways
- Translate the financing needs into granular sector-level investment objectives
- Determine how different public, private and international financing sources can be optimized
- Establish which financial instruments (including risk sharing mechanisms) are most effective for the different objectives
- Develop a strategy to manage the process of prioritizing the objectives to facilitate investment decisions
- Divide specific financing milestones/targets over short, medium, and long-term periods
- Design the relevant investment and support programs
- Consider the role of fiscal, economic, and other climate and environmental policy. Put in place public support mechanisms to deliver on strategy (e.g., policy incentives, direct public finance support through taxes and subsidies)
- Identify a pipeline of bankable projects; where these projects do not exist, authorities should invest in the preparation of a pipeline of bankable projects
- Assess which international climate finance sources are available and determine certainty and predictability of these investment flows
- Consider the role of NDBs and other domestic public finance entities in addressing finance needs
- Publish and promote the climate finance strategy to signal policy commitment and enable investor certainty

PHASE 3 - MONITORING & EVALUATION

- Identify and promote further market enabling conditions (e.g. financial regulation)
- Continue stakeholder engagement processes
- Set up monitoring, reporting and verification mechanisms to track progress toward climate finance targets
- Set up a regular review mechanism to allow integration of new priorities, changing circumstances and resourcing requirements

SELECTED EXAMPLES

COUNTRY	INITIATIVE
Ethiopia	Climate Resilient Green Economy Strategy (2011)
France	Climate Finance Landscape (2018)
Germany	The Landscape of Climate Finance in Germany (2012)
Kenya	Kenya Climate Finance Strategy (2012)
Rwanda	Green growth and climate resilience national strategy (2011)
United Kingdom	Clean Growth Strategy (2017)

RESOURCES

- ACT Alliance (2018) A Resource Guide to Climate Finance: An orientation to sources of funds for climate change programs and action
- E3G (2014) Strategic national approaches to climate finance
- GCF Green Climate Fund Project Preparation Facility
- NAP Global Network (2017) Financing National Adaptation Plan (NAP) Processes: Contributing to the achievement of NDC adaptation goals
- NDC Partnership (2020) Understanding NDC Financing Needs

TOOLKIT

Create a National Platform or Taskforce on Green Finance

GOAL

Establish a multi-stakeholder platform to support the creation and implementation of a financial sector roadmap, green finance policy development and the delivery of the national climate finance strategy.

DEFINITION

Document outlining the long-term strategic direction to green the overall financial system and developments needed to advance the countries' green finance agenda.

KEY STAKEHOLDERS

Ministry of Finance, central bank, financial supervisory/regulatory authority, industry associations

RATIONALE

A national platform on green finance can be an important mechanism to ensure coordination between stakeholders and accelerate the growth of green finance. Countries may not have an organizational structure yet that links the key stakeholders, including the relevant ministries (e.g., environment, infrastructure, finance), central banks, financial supervisors, financial sector participants, and other technical experts, or relevant external stakeholders.[10] A platform could form the overarching coordinating, technical or implementation body of a green finance program. Depending on a country's progress and objectives, this could take the form of a taskforce to design the basis of a country's green finance strategy (e.g., China or UK), provide the technical and institutional support to facilitate the implementation of specific goals, or function as a platform for key stakeholder engagement and development of initiatives (e.g., Netherlands).

10. For example, China's Green Finance Taskforce consists of experts from the PBOC, the China Banking Regulatory Commission, the Ministry of Finance, policy banks, commercial banks, credit rating agencies, stock exchanges, insurance companies, fund companies, the Chinese Academy of Social Sciences, universities, and non-governmental think tanks, with additional support and contribution coming from a number of foreign experts.

IMPLEMENTATION CONSIDERATIONS

A national green finance platform can differ based on individual country needs and challenges. A platform can be designed to cover a broad range of topics related to green finance or be designed to achieve specific objectives outlined in national climate finance plans.

The platform should have a clear governance structure and decision-making process. It can consist of a steering committee that holds high-level meetings between senior leadership of the participating stakeholder groups. It can also host working groups on different issues relevant to the country to push forward the more technical work. To select the relevant individuals for the steering committee and/or the working groups, the chair could issue a call for interest, based on which membership could be selected. Representation from certain ministries may be essential, so the selection process should be driven by the country context.

CHECKLIST

PHASE 1 - PLANNING

- Identify the key objective of the platform/taskforce
- Appoint the secretariat to support the development process and information dissemination
- Decide on the appropriate governance structure and decision-making process, including chair organization
- Select the right individuals and institutions to be represented across government, central bank/regulator, private sector, academia, nongovernmental organization (NGO) or other local/international experts
- Agree on the Terms of Reference
- Agree on deliverables for the platform and/or individual working groups

PHASE 2 - IMPLEMENTATION

- Set up technical working groups (where relevant) and select working group membership
- Define workplan and deliverables for the technical working groups
- Conduct technical work

PHASE 3 - MONITORING & EVALUATION

- Publish technical outputs/reports
- Organize knowledge sharing events to promote and disseminate outputs
- Define follow-up workplan based on lessons learned

SELECTED EXAMPLES

COUNTRY	INITIATIVE
China	Green Finance Taskforce (established in 2014)
European Union	High-level expert group on sustainable finance (established in 2016)
Hong Kong	Green and Sustainable Finance Cross-Agency Steering Group (established in 2020)
Netherlands	Platform for Sustainable Finance (established in 2016)
Switzerland	Swiss Sustainable Finance (established in 2014)
South Africa	South Africa Sustainable Finance Initiative (established in 2017)
United Kingdom	Green Finance Taskforce (established in 2017) and Climate Financial Risk Forum (established in 2019)

RESOURCES

- EU (2018) Final Report EU High-Level Expert Group on Sustainable Finance
- The People's Bank of China & UNEP (2015) Final report China Green Finance Taskforce
- UK Government (2017) UK Green Finance Taskforce Terms of Reference
- De Nederlandsche Bank (DNB) Dutch Sustainable Finance Platform

Targeted forum on building capacity on climate-related financial risks

- Bank of England (2019) UK PRA-FCA Climate Financial Risk Forum

TOOLKIT

Participation in Green Finance-Related International Networks

GOAL

Build local capacity, benefit from information sharing, and ensure alignment with international standards and best practice.

DEFINITION

Participation in international networks to facilitate knowledge sharing and collaboration

KEY STAKEHOLDERS

Ministry of Finance, Central Bank, financial supervisory/regulatory authority

RATIONALE

A multitude of international networks which can be leveraged to support countries in their efforts to meet domestic climate goals and scale up green finance. Specific objectives range from enhancing green investments in the financial sector, capacity building or coordinating across financial regulators/supervisors. These networks have proven to be powerful mechanisms to share knowledge and best practices, signal policy commitments, and facilitate the joint development of international standards. An international field of cooperative authorities has developed as countries face similar challenges to mobilize green finance and address climate and environmental risk. Joining existing networks can help kickstart domestic action on green finance. Where it is not feasible to join networks, it is important to engage with relevant standards as they develop to ensure alignment with international best practices. Many international regulatory bodies have now set up dedicated green finance-related working groups or taskforces. Examples include the Basel Committee on Banking Supervision, International Association of Insurance Supervisors, International Organization of Securities Commissions, the International Organization of Pension Supervisors and the International Accounting Standards Board.

IMPLEMENTATION CONSIDERATIONS

Domestic circumstances, needs, and resource constraints may influence the choice of which international networks will yield the most benefit. As many networks are voluntary, consisting of entities contributing on a best-efforts basis the process for joining is often straightforward. It is important that information collected from these international networks is disseminated through the involvement of national public networks or industry associations. A dedicated national network (see toolkit 3) should be considered, where there are specific local knowledge gaps or a lack of coordination mechanisms.

CHECKLIST

PHASE 1 - PLANNING

- Identify specific local knowledge gaps and country needs
- Conduct a stock take of the relevant existing international networks and platforms
- Identify priority networks

PHASE 2 - IMPLEMENTATION

- Encourage different domestic regulatory authorities to engage with green finance working groups of international regulatory/standard setting bodies
- Encourage the central bank/supervisory authority to join the Central Banks and Supervisors Network for Greening the Financial System (NGFS)
- Encourage the Ministry of Finance to join the Finance Ministers Coalition for Climate Action
- Encourage domestic industry associations or other commercial bodies to engage with international green finance-related networks
- Encourage the stock exchange to join the Sustainable Stock Exchanges initiative

PHASE 3 - MONITORING & EVALUATION

- Where gaps exist, set up domestic networks or platforms to build capacity, share knowledge, and develop best practices.
- Disseminate knowledge from international networks to local context
- Consider regional outreach events based on international experience

KEY NETWORKS AND INITIATIVES

Basel Committee on Banking Supervision's High-level Task Force on Climate-related Financial Risks (TFCR)	The Basel Committee established the TFCR to undertake work on climate-related financial risks. A key focus is to conduct research to better understand climate risk transmission channels as well as methodologies for measuring and assessing these risks. Based on this analytical work, the TFCR will consider the extent to which climate-related financial risks should be incorporated in the existing Basel Framework, and identify supervisory practices to mitigate such risks.
Central Banks and Supervisors Network for Greening the Financial System (NGFS)	A voluntary coalition of central banks and supervisors established with the purpose of strengthening the global response required to meet the goals of the Paris Agreement. NGFS aims to enhance the role of the financial system to manage climate-related and environmental risks and to mobilize capital for green investments.
Coalition of Finance Ministers for Climate Action	The Coalition aims to mobilize and align the finance needed to implement countries' national climate action plans; establish best practices such as climate budgeting, as well as strategies for green investment and procurement; and factor climate risks and vulnerabilities into members' economic planning.
EU Sustainable Finance Platform	The Platform aims to enable cooperation by bringing together the best expertise on sustainability from the corporate and public sector, from industry as well as academia, civil society, and the financial industry. One of the Platform's current key objectives of the platform is to enable close cooperation to deliver on the EU climate targets for 2030 and 2050.
G20 Sustainable Finance Working Group	In April 2021, the G20 Finance Ministers and Central Bank Governors re-established the Sustainable Finance Study Group and agreed to elevate it to a working group. The Group will begin by developing a climate-focused sustainable finance G20 roadmap in specific priority areas that can be adapted or expanded in future years to cover other topics.
International Financial Reporting Standards (IFRS) working group on global sustainability reporting standards	The purpose of this working group is to accelerate the convergence in global sustainability reporting standards and to undertake technical preparation for a potential international sustainability reporting standards board under the governance of the IFRS Foundation.

KEY NETWORKS AND INITIATIVES

Sustainable Banking Network (SBN)	The IFC-supported SBN is a voluntary community of financial sector regulatory agencies and banking associations from emerging markets committed to advancing sustainable finance.
UN Principles for Responsible Banking, Principles for Responsible Investment, Principles for Sustainable Insurance	Principles outlining frameworks to provide for a sustainable banking, insurance, and investment sector, and help the industry demonstrate how it contributes to sustainability goals.
IOSCO Sustainable Finance Network (SFN)	IOSCO established its SFN to provide a forum for members to exchange experiences and gain a better understanding of sustainability issues.
OECD Centre on Green Finance and Investment	A global platform for knowledge exchange between the private sector, government and regulatory institutions, academia, and civil society.
Sustainable Insurance Forum (SIF)	The SIF is a network of leading insurance supervisors and regulators seeking to strengthen their understanding of and responses to sustainability issues for the business of insurance. Supported by the International Association of Insurance Supervisors (IAIS), the SIF is a global platform for knowledge sharing, research and collective action.
Task Force on Climate-related Financial Disclosures (TCFD)	The Financial Stability Board's TCFD is a framework for voluntary, consistent climate-related financial disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders. The TCFD aims to enhance market transparency and understanding of climate-related risks and opportunities in order to facilitate the efficient allocation of capital in the transition to a low-carbon economy.
Sustainable Stock Exchanges Initiative (SSE)	The SSE is a UN Partnership Program, whose aim is to support members in working with stakeholders including investors, issuers, regulators, supervisors, policymakers, and international organizations to enhance sustainable finance. The SSE's key themes are rooted in the SDGs.

TOOLKIT

Support Financial Institutions' Commitments to Align with the Paris Agreement

GOAL

Encourage financial institutions to take concrete action to align their businesses, portfolios and strategies with net-zero pathways and climate objectives.

DEFINITION

A working definition of the Paris Alignment includes: a process through which a financial institution aims to align its business, portfolios, and strategy with the objectives of the Paris Agreement consistent with achieving a global target of net-zero emissions by 2050.

KEY STAKEHOLDERS

Ministry of Finance, financial supervisory/regulatory authority, industry associations

RATIONALE

There is international consensus on the urgent need to align financial flows with the pathway towards carbon-neutral and climate-resilient development. Encouraging financial institutions to consider the Paris alignment of their portfolios, businesses and strategy can help them capture the opportunities created by the low carbon transition and manage the associated risks. Ultimately, Paris-aligned financial institutions can help fill the financing gap to meet (and raise the ambition) of a country's climate goals.

IMPLEMENTATION CONSIDERATIONS

Governments, financial supervisory/regulatory authorities, or central banks can play different roles in getting their financial sectors to align with Paris goals. Key tools and options include: (a) convening a financial sector platform with the objective of committing to Paris alignment; (b) encouraging the financial sector to formally sign up to the government's climate strategy; (c) educating the financial sector on the different tools and methodologies that exist for each step of the "alignment journey".

Despite the lack of an agreed methodology to measure Paris alignment, there is a range of tools which support the different steps of Paris alignment (including measuring, target setting, steering, monitoring and reporting). Most of the methodologies presented in this toolkit are designed to facilitate Paris alignment at the financial institution level (rather than at the country or sector level).[11] Among this group, portfolio temperature alignment methodologies distinguish themselves by focusing on estimating the temperature pathway that the relative "climate performance" of an asset, portfolio, strategy, or investor is consistent with, in relation to the net-zero or 1.5°C target (see figure 5).

11. Separately, several Multilateral Development Banks, including the World Bank, developed a joint framework for aligning their activities with the goals of the Paris Agreement. This framework has a slightly different scope, but can also provide useful input in developing a strategic Paris alignment approach.

Figure 5. Overview of Paris alignment methodologies

	MEASURING	TARGET-SETTING	STEERING	TRACKING PROGRESS	REPORTING
Example Tool	PCAF Partnership for Carbon Accounting Financials	SCIENCE BASED TARGETS	PACTA Paris Agreement Capital Transition Assessment	Transition Pathway Initiative	POSEIDON PRINCIPLES
Sectors	Cross-sectoral	Cross-sectoral	Power, fossil fuels, automobile, cement, steel, shipping and aviation	Cross-sectoral	Shipping
Asset Classes	Listed equity and bonds, business loans, CRE, mortgages, motor vehicle loans, project finance	Real estate, mortgages, electricity generation project finance, corporate debt and equity	Public equity, corporate bonds, corporate lending	Equities (to be expanded to fixed income)	Lendees, lessors, and financial guarantors with shipping portfolios
Metrics/Data	GHG emissions	GHG emissions	Technology exposure based on asset-level data or GHG intensity	Carbon intensity	Annual Efficiency Ratio based on fuel consumption

It is important to acknowledge that there is no perfect methodology, or one that covers all steps of the process. Yet each of them provides a starting point to assess how an institution should be heading toward Paris alignment. Methods should therefore be used alongside each other because they have distinct objectives, strengths and weaknesses, and also cover different sectors or asset classes.

Finally, governments and institutions should recognize that portfolio alignment is no guarantee for real world impact. Aligning a portfolio could mean selling off emissions to another institution, which would not actually take emissions out of the system. It is essential to recognize that activities resulting in “relative” rather than “absolute” emissions reductions may be counterproductive to achieving long-term emission reduction goals.

CHECKLIST

PHASE 1 - PLANNING

- Raise awareness with relevant actors in the financial sector on the importance and benefits of assessing and achieving Paris alignment (e.g. through webinars)
- Encourage domestic financial institutions to join international initiatives and partnerships related to the Paris agreement or SDGs
- Engage with industry associations (banking, insurance, asset managers) to initiate joint partnerships or commitments
- Offer public sector support to facilitate the process of developing a commitment
- Encourage the financial sector to formally sign up to the government's climate strategy/NDC
- Convene a financial sector platform with the objective of encouraging domestic financial institutions to set public targets on aligning portfolios and business activities with Paris goals

PHASE 2 - IMPLEMENTATION

- Educate financial institutions on the different tools and methodologies for each phase of achieving Paris alignment
- Organize knowledge-sharing events between financial institutions on their experience of using different methods for assessing Paris alignment
- Agree on annual progress updates on financial sector commitments
- Develop a how-to guide on the use of Paris alignment methodologies (see Box 2 example below)
- Encourage financial institutions' climate objectives through soft law or potentially legislation

PHASE 3 - MONITORING & EVALUATION

- Assess the Paris alignment of the financial system at the country level (e.g. supported by the PACTA tool)

Box 2. Example of a ten-step Paris-alignment starting guide for financial institutions

1. Get senior-level commitment within the organization to align lending and/or investment portfolios with Paris goals and/or SDGs
2. Publicly communicate the institution's ambition and target to achieve Paris alignment
3. Join an international/national initiative which has the objective of aligning with Paris goals
4. Set up an internal structure for the delivery of the project and allocate responsibilities to relevant teams
5. Design a strategy/project plan, including clear timelines for delivery of the project, as well as the mapping of interlinkages with other policy and regulations, e.g., schemes for pricing of emissions
6. The Paris alignment process consists of different phases. Based on the strategy, pick a methodology/metric (where relevant):
   a. Per sector
   b. Per step of the alignment process
   c. Per asset class
7. Engage with experts, service providers or other relevant parties to support the analysis
8. Collect the required (e.g. asset/client level) data (public, bilaterally from clients, external data providers)
9. Decide on the relevant reporting or disclosure mechanism (standalone report, as part of Annual Report) and report on the results
10. Get started – even if the approach is not perfect yet

SELECTED EXAMPLES

INITIATIVE		
Partnership/ commitment	UN Net-Zero Asset Owners Alliance	An alliance that is committed to transiting asset owners' investment portfolios' GHG emissions to net zero by 2050. The alliance focuses on engaging corporates and policymakers on actions, emphasizing GHG emissions reduction outcomes in the real economy
	Banks' collective commitment to climate action	A group which requires signatories to take concrete action to align their portfolios with Paris goals, within a year of joining; and facilitate the economic transition required to achieve climate neutrality; and be publicly accountable for their impact and progress on these commitments.
	IIGCC Paris Aligned Investment Initiative	An initiative to develop concepts, assess methodologies and test portfolios for Paris alignment.
	Dutch financial sector commitment to Cabinet's climate goals	A commitment by Dutch financial institutions to finance the energy transition toward low carbon, and report on the climate impact of their loans and investments.
Tools and methodologies	Paris Agreement Capital Transition Assessment (PACTA)	An open-source software from 2°C Investing Initiative that enables users to understand how to align their portfolio with Paris-aligned pathways.
	Partnership for Car-bon Accounting Financials (PCAF)	A Global Carbon Accounting standard to measure financed emissions of lending and investment portfolios.
	Science Based Target for Financial Institutions	A tool to set science-based emissions reduction targets.

RESOURCES

- I4CE (2019) A Framework for Alignment with the Paris Agreement: Why, What and How for Financial Institutions?
- Louis Bachelier (2020) The alignment cookbook: A Technical Review of Methodologies Assessing a Portfolio's Alignment with Low-Carbon Trajectories or Temperature Goal
- Portfolio Alignment Team COP26 Private Finance Hub (2020) Measuring Portfolio Alignment: Assessing the position of companies and portfolios on the path to net zero
- NewClimate, GermanWatch, WRI (2020) Memos on the Multilateral Development Banks' Paris Alignment Approach

TOOLKIT

Conduct a Climate-Related and Environmental Risk Assessment

GOAL

Identifying the main climate-related and environmental financial risks in a jurisdiction or region and assessing their potential impact on the financial sector.

DEFINITION

The process to identify and assess the main climate-related and environmental risks to the financial sector, including transition and physical risks.

KEY STAKEHOLDERS

Financial supervisory/regulatory authority, central bank, Ministry of Finance, knowledge institutes (e.g., meteorological institutes)

RATIONALE

A climate risk assessment, potentially including stress testing and scenario analysis, provides a fact base for dialogue between stakeholders and supports the improvement of risk management practices. Insights into the main climate-related financial risks will help macro- and microprudential supervisors focus their attention on the most relevant risks, as well as provide starting points for financial institutions to improve their internal risk management (e.g., mapping the main identified risks to their specific business model and balance sheet). The scope of assessments can potentially be expanded to include other environmental and social risks, including nature-related and biodiversity risks.

IMPLEMENTATION CONSIDERATIONS

Supervisors are typically moving through several phases when assessing climate-related and environmental risks to their financial sector (see checklist). These phases are not necessarily linear but can make up an iterative cycle. It is also possible to identify risks without quantitative impact assessments based on stress tests and scenario analysis. The assessment should carefully consider local conditions and circumstances (e.g., in relation to the regional distribution of natural hazards and sectoral contribution to GHG emission). Depending on the goal of impact assessments, the time horizon of the analysis could be both short and long term. As part of these analyses, some assumptions may need to be made, such as constant balance sheets over the scenario horizon. Stress tests for climate-related and environmental risks are typically explorative in nature and have so far not been used as pass/fail exercises to increase capital requirements for financial institutions. Climate-related and environmental risks assessments typically lend themselves well to be published in the form of a public report.

CHECKLIST (adapted from NGFS, 2020a)

PHASE 1 - PLANNING

- Set up a project organization consisting of a core project team, a steering group, and a broad network of different specialists
- Develop a project plan
- Set up interviews with financial institutions, environmental specialists, scientists, and other experts
- Develop a qualitative survey for financial institutions
- Develop a quantitative data request (template covering physical and transition risks)
- Collect quantitative data on regional and sectoral exposures.
- Collect qualitative data (e.g., interviews) on scenarios, transmission channels, financial institutions' exposures, and current risk management practices.

PHASE 2 - IMPLEMENTATION

- Assess quantitative and qualitative information and map relevant climate and environmental risks transmission channels.
- Determine the climate-related and other environmental exposures in the financial sector in terms of financial risks (including credit risk, operational risk, market risk)
- Determine which climate-related and environmental risks are most material in the jurisdiction
- Develop a few extreme but plausible scenarios or set up vulnerability assessments of exposures to the risks. This could include the identification and further development of disaster risk models, macroeconomic models, and transition risk models.
- Conduct a stress test or a sensitivity test to estimate the potential magnitude of the risks, and determine losses and impact on prudential ratios and/or other risk indicators
- Determine a supervisory response to the findings of the assessment, including recommendations for public authorities and financial institutions
- Develop a story line (main findings and conclusions), supported by quantitative and qualitative data and pictures
- Publish a report and organize media events and outreach workshops to share results with internal and external stakeholders

PHASE 3 - MONITORING & EVALUATION

- Continuously working with the financial sector and other stakeholders to improve the understanding, pricing, and management of climate-related risks
- Set the key risk indicators that will help monitor the climate-related and environmental risks
- Maintain internal capacity and periodically review the identified main climate risks and their mitigation

Box 3. Relevant sources for the assessment of climate-related and environmental risks

- **World Bank Climate Change Knowledge Portal** (CCKP) provides global data on historical and future climate vulnerabilities and impacts. It contains information on sector-related climate indices, vulnerability to natural hazards, sectoral impacts of climate change, and adaptation framework for different countries.
- **IMF Climate Change Indicators Dashboard** includes several climate-related economic indicators developed by the IMF in collaboration with other international organizations in four categories: Economic Activity and Climate, Cross-Border, Financial, Physical and Transition Risks, and Government Policy.
- **Notre Dame-GAIN Index** measures a country's readiness for and vulnerability to climate change. Risk rankings can be useful to benchmark the country's climate and environmental performance.
- **Germanwatch Climate Risk Index** ranks countries on losses from weather-related events.
- **EM-DAT** is an online database that tracks frequency and impact of natural disasters. Its data can be used to build figures that compare intensity and frequency of storms over time.
- **World Resources Institute Aqueduct Tool** to identify and evaluate current and future water risks across locations. It can also be used to assess the impact of water on agriculture, food security, coastal and riverine risks.
- **ENCORE** is a tool to help users better understand and visualize the impact of environmental change on the economy.
- **Climate Technology Compass** is a platform to map the technology transition and investments necessary to achieve the 2°C target for 100+ countries and 8 climate relevant sectors.
- **World Bank Carbon Pricing Dashboard** provides key statistics on regional, national, and subnational carbon pricing initiatives
- **UNEP FI Portfolio Impact Analysis Tool** guides banks through a holistic analysis of their retail (consumer and business banking) and wholesale (corporate and investment banking) portfolios.
- **UNEP FI/Natural Capital Finance Alliance Drought stress testing tool** to assess drought risk within their portfolios.
- **SensesToolkit (Potsdam Institute/PIK)** provides climate scenario tools for finance, policy and regional decision makers.
- **EXIOBASE** is a global, detailed Multi-Regional Environmentally Extended Supply-Use Table (MR-SUT) and Input-Output Table (MR-IOT). It was developed by harmonizing and detailing supply-use tables for a large number of countries, estimating emissions and resource extractions by industry.

SELECTED EXAMPLES

AUTHORITY	INITIATIVE
Bank of England	Scenario analysis - Climate Biennial Exploratory Scenario (CBES; forth-coming)
Banque de France	Climate Risk Assessment – Financial Stability focus (2020)
European Central Bank	Climate Risk Assessment – Financial Stability focus (2019)
Bank of England	Climate Risk Assessment – Banking Sector (2018)
Dutch Central Bank	DNB transition stress test (2018)
Dutch Central Bank	Climate Risk Assessment – Financial Sector (2017)

RESOURCES

- BIS (2020) The green swan
- BCBS (2021) Climate-related risk drivers and their transmission channels
- FSB (2020) The implications of climate change for financial stability
- NGFS (2020a) Guide for supervisors – Integrating climate-related and environmental risks into prudential supervision
- NGFS (2020b) Guide to climate scenario analysis for central banks and supervisors
- NGFS (2020c) NGFS Climate Scenarios for central banks and supervisors[12]

12. New scenarios are expected to be published in the second quarter of 2021.

TOOLKIT

Incorporate Climate-Related and Environmental Risk into Supervisory Practice

GOAL

Develop a robust supervisory response to address climate-related and environmental risk by building institutional capacity and integrating the consideration of these risks into the different components of the practice of financial supervisors and regulators (including prudential and capital markets).

DEFINITION

Embedding the consideration of climate-related and environmental risk into supervisory practices and frameworks, including the integration into governance and strategy arrangements; the development of supervisory tools and methods; internal capacity building; and the integration into supervisory review and monitoring processes.

KEY STAKEHOLDERS

Central bank, financial supervisory/regulatory authority (prudential and market conduct)

RATIONALE

Climate-related and environmental risks can have an impact on financial stability as well as the safety and soundness of financial institutions, or on how well financial markets are functioning. The consideration of these risks is therefore relevant to the mandate of central banks, the prudential supervisor, and capital markets authorities, which play a key role in ensuring that these are integrated into its supervisory practices and financial stability monitoring. A growing number of central banks, regulators, and supervisors across the globe have issued warnings on the impact of climate and environmental risks on the stability of their financial systems, or the impact on financial markets or financial market participants.

IMPLEMENTATION CONSIDERATIONS

The full integration of the consideration of climate-related and environmental risk into supervisory practice requires significant time and resources. The section below sets out the key components of an approach to build institutional capacity, integrate climate and environmental risks into governance arrangements, and embed these risks in the supervisory toolbox. However, each individual component may need a dedicated plan on its own, implementation of which may need to be adapted to the relevant local supervisory and institutional context. Implementation will further depend on the type of supervisory authority, i.e. prudential or capital markets/conduct regulator.

Authorities need to develop a strategy to integrate climate-related and environmental risks in their supervisory frameworks, establish an internal organization and governance structure, and allocate adequate resources to address the risks. Insights from the climate and environmental risk assessment described in toolkit 6 may feed into the design of the most adequate approach of embedding these risks into supervisory practice. Adequately addressing these risks requires the boards of supervisory authorities and central banks to be committed and engaged, and to incorporate the consideration of these risks into their mandate. Issuing supervisory guidance or expectations in relation to climate risk is addressed in toolkit 8.

Supervisors can take qualitative and quantitative measures to address climate-related and environmental risks and ensure adequate management of these risks by financial institutions. When doing so, supervisors can make use of their existing supervisory toolbox to take mitigating action. The specific application may depend on the type of institutions covered under the supervisory authorities' mandate (e.g. banks, insurers or pension funds). Tools and techniques for assessing and mitigating climate-related and environmental risks are emerging and may develop as understanding matures. Supervisory measures may include:

- Targeted supervisory on-site assessments on climate-related and environmental risks
- Integration in the Supervisory Review and Evaluation Process (SREP), including business model analysis and an assessment of the internal governance and controls related to climate-related and environmental risks
- Expectations to integrate climate-related and environmental risks in banks' Internal Capital Adequacy Assessment Process (ICAAP) or insurers' Own Risk and Solvency Assessment (ORSA)
- Updating of a supervisory rating system to account for climate and environmental risks
- Explore the differentiation in Basel Pillar 1 risk weightings, and consider introduction of potential adjustments based on evidence-based outcomes and international consensus and standards
- Communicate expectations for climate-related and environmental risks to be included under Basel Pillar 2 (including, where appropriate, capital add-ons for shortcomings in governance and risk management, or to address concentration risk) and Basel Pillar 3 (market discipline and disclosure requirements)

* Applies specifically to market conduct supervisors

- Integration of elements related to climate and environmental risks in “fit and proper tests”, which seek to assess the ability of managers, directors and shareholders to fulfil their duties within their assigned roles in a financial institution
- Integration of climate-related and environmental risks in disclosure requirements or listing rules for issuers of listed securities*
- Provision of expectations regarding the use of external reviews and information service providers, such as credit rating agencies (CRAs), benchmarks and auditors*
- Implementation of measures to prevent, detect and sanction greenwashing and the misuse of funds used through sustainable or green-labelled instruments*

* Applies specifically to market conduct supervisors

CHECKLIST

PHASE 1 - PLANNING

- Obtain commitment and establish accountability from the authority's board or governor
- Develop a strategic plan for the integration of climate-related and environmental risk into supervisory practice/ throughout the organization
- Establish an internal governance structure and operating model
- Get senior executive sponsorship to ensure support at different organizational levels
- Create internal awareness through knowledge sharing sessions on the context of climate and environmental risk, and relevance for the authority's mandate and objectives

PHASE 2 - IMPLEMENTATION

- Build knowledge and cooperation arrangements with internal and external stakeholders (national policymakers, international authorities and external experts)
- Build further in-depth staff member capacity on specific/technical issues
- Conduct a (qualitative) survey to collect information from financial institutions[13]
- Report on survey outcomes and sector assessment
- Raise awareness among financial institutions through supervisory engagement or roundtables
- Provide supervisors with a toolkit / guidelines for supervisory engagement
- Establish a risk-focused industry dialogue or platform (chaired by the authority/authorities)
- Formally embed climate-related and environmental risk in individual components of supervisory frameworks and tools (see list of potential measures under implementation considerations above)
- Explore risk mitigation measures through use of capital requirements (e.g. Pillar 2 capital add-ons for firms that do not meet supervisory expectations and/or that have concentrated exposures)

PHASE 3 - MONITORING & EVALUATION

- Publicly report on the financial supervisory/regulatory authority's governance, strategy, and risk management arrangements in relation to climate risk, aligned with the TCFD recommendations (as part of the annual report, or as a standalone TCFD report)

13. For survey examples, see the NGFS Guide for Supervisors, and Bank of England's report Transition in Thinking.

SELECTED BEST PRACTICE EXAMPLES

- Banco Central do Brasil Sustainability Agenda
- Banco de Portugal Commitment to Sustainability and Sustainable Finance
- Reserve Bank New Zealand Climate Change Strategy
- Bank of England Climate-related financial disclosure 2020

RESOURCES

- Bank for International Settlements (BIS), Turning up the heat: Climate risk assessment in the insurance sector (2019); and The Green Swan: Central banking and financial stability in the age of climate change (2020)
- Basel Committee on Banking Supervision (BCBS)[14], Climate-related financial risks: a survey on current initiatives (2020)
- BCBS, Climate-related financial risks – measurement methodologies (2021)
- Central Banks and Supervisors Network for Greening the Financial System (NGFS), First Comprehensive Report - A call for action: Climate change as a source of financial risk (2019)
- International Association of Insurance Supervisors (IAIS), IAIS & Sustainable Insurance Forum (SIF) Issues Paper on Climate Change Risks to the Insurance Sector (2018); and IAIS & SIF Issues Paper on the Implementation of the Recommendations of the TCFD (2020)
- International Organization of Pension Supervisors (IOPS), IOPS Supervisory Guidelines on the Integration of ESG Factors in the Investment and Risk Management of Pension Funds
- International Organization of Securities Commissions (IOSCO)[15], Sustainable Finance and the Role of Securities Regulators and IOSCO (2020); and Sustainable Finance in Emerging Markets and the Role of Securities Regulators (2019)

14. BCBS recently established a high-level Task Force on Climate-related Financial Risks
15. IOSCO set up a Sustainable Finance Network to allow exchange between members on sustainable finance.

TOOLKIT

Issuing Supervisory Guidance on Climate-Related and Environmental Financial Risk

GOAL

Enhance financial institutions' approaches to managing climate-related and environmental risk.

DEFINITION

Publish guidelines on supervisory expectations in relation to regulated institutions' approaches to addressing climate-related and environmental risk

KEY STAKEHOLDERS

Central bank, financial supervisory/regulatory authority

RATIONALE

Issuing supervisory guidance is a key component of the supervisory response and plays an important role in clarifying authorities' expectations in relation to regulated institutions' response to climate-related and environmental risks. Setting supervisory expectations is an important mechanism to drive financial institutions to action and enhance their approaches to managing climate-related and environmental risk. Initiatives are underway in many jurisdictions to issue supervisory guidance, which tend to focus on (a combination of) several key areas: governance, strategy, risk management, scenario analysis and stress testing, and disclosure. The scope often covers different types of institutions.[16]

16. Banks and insurers, in particular, are often covered by the same supervisory guidance. Some may be even broader and also include asset managers, pension funds, or other institutional investors.

IMPLEMENTATION CONSIDERATIONS

To date, supervisory guidance in the area of climate-related and environmental risks has generally been issued at a high-level. This approach reflects the fact that many supervisors and financial institutions are in an early phase of considering these risks. Over time, it is expected that supervisors will move beyond setting high-level or general expectations toward being more precise and/or prescriptive. However, it is important to recognize that setting expectations early on will be an important driver to catalyze action in the financial sector.

Although the exact nature and legal status of the expectations may differ across jurisdictions, the content is generally broadly similar. It is therefore advisable for supervisors to engage with existing guidance as a starting point for issuing national guidance (see selected examples below). Expectations should be commensurate with the risk profile and size of each financial institution. The scope of the guidance may also vary depending on the local context. Although advanced economies have often maintained a narrow climate-related and environmental lens, the scope of guidance in emerging markets or developing economies has at times been broader, to include ESG or sustainability more broadly. Given particular challenges of having a broad scope, the determination of the exact scope should be driven by a good understanding of the different risks and their interconnections.

Depending on the local context, supervisory guidance could range from being formally mandated to being more voluntary in nature. Guidance could be integrated into or issued as (part of) formal regulation (e.g., national banking laws) or take the form of supervisory expectations. The most appropriate approach may depend on local regulatory or supervisory frameworks and common country practice. To date, most supervisory guidance has been the interpretation of existing rules or regulation in the context of climate-related and environmental risks, i.e. it does not require the introduction of new rules, as the consideration of these risks should be captured within the existing regulatory framework.

Furthermore, it is important to consider the value of the consultation period to gather feedback and ensure industry buy-in for the draft guidance. This includes active external engagement through, for example, the organization of roundtables or webinars. Equally, it is important that there is solid internal engagement to drive implementation as well as action to ensure that supervisors are aware of the guidance and prepared for supervisory engagement with their firms.

CHECKLIST

PHASE 1 - PLANNING

- Assign working-level and executive sign-off responsibility for drafting supervisory guidance
- Determine which supervised institutions are in scope (e.g., banks, insurers)
- Familiarize and engage with existing supervisory guidance to receive feedback on how the proposed supervisory guidance could be leveraged
- Determine specific areas' scope (e.g., governance, risk management, disclosure, and stress testing and scenario analysis)
- Engage with other relevant departments early on (e.g., prudential policy, legal, communications)
- Decide publication date and plan committee sign-off meetings accordingly

PHASE 2 - IMPLEMENTATION

- Prepare draft of guidance or expectations
- Map guidance to existing regulatory framework to ensure legal alignment
- Get internal review, feedback, and sign-off
- Publish draft expectations for consultation
- Organize external engagement (e.g., roundtables for different types of firms, webinars)
- Organize internal engagement and preparation of supervisors
- Process consultation responses
- Draft final guidance (including getting internal review)
- Publish final guidance
- Organize event/let publication coincide with event around publication and deliver accompanying speech (by executive director/governor)
- Organize internal engagement to train relevant supervisors and regulators
- Organize external engagement to train relevant supervised entities

PHASE 3 - MONITORING & EVALUATION

- Ask firms to prepare implementation plan
- Monitor implementation of supervisory guidance
- Update supervisory guidance in line with emerging practice

OVERVIEW GOOD PRACTICE RECOMMENDATIONS

ELEMENT	GOOD PRACTICES ON THE SCOPE OF SUPERVISORY GUIDANCE
I. Governance	• Board-level engagement and accountability, including understanding of the impact of climate and environmental risks on the long-term business model • Effective oversight by the board and relevant sub-committees, based on sound internal risk reporting • Clearly identified individual roles and responsibilities for climate-related and environmental risk management • Oversight in line with board-approved climate/environmental risk appetite statement
II. Strategy	• Adopt long-term view, beyond the standard business planning horizon (of 3-5 years) to inform strategic direction and assess long-term business model impact • Use results from (qualitative/quantitative) scenario and sensitivity analysis to inform strategy-setting process and ensure future business model viability • Have execution capabilities in place to ensure the business strategy is cascaded down to individual business and product lines
III. Risk Management	• Risk identification process considers short- and long-term risks, using forward-looking data • Risk assessment informs understanding of the potential current and future impacts of physical and transition risk factors on clients, counterparties and investees • Use of quantitative or qualitative tools and metrics[17] to monitor (changes in) exposure to climate-related and environmental risks and develop Management Information (MI) reporting • Climate-related and environmental risks are integrated into the ICAAP and ORSA, including all material exposures relating to climate change; an assessment of how the materiality of exposures is determined in the context of the business (where the risk is not deemed material, firms are expected to provide evidence of this conclusion) and sensitivities to longer term business plan (based on longer term scenario analysis) • Develop mitigation plans in case of material exposures (such as reducing concentrations) • Measures and frameworks are in place to ensure preparedness for natural disasters and other immediate environmental crises
IV. Stress Testing and Scenario Analysis	• Conduct (qualitative/quantitative) scenario analysis to test the resilience of the long-term business model and capital adequacy against a plausible set of future scenarios • Use stress testing, scenario or sensitivity analysis to assess material exposure to climate risk and impact on solvency, liquidity or ability to cover insurance pay outs • Ensure that scenario analysis or stress testing covers both short (e.g. 1-3 years), medium (3-5/10 years), and longer-time horizons (10 years or more)
V. Disclosure	• Disclose information and metrics on exposure to climate-related and environmental risks, their potential impact and how those risks are managed (in line with the TCFD recommendations) • Demonstrate transparency by integrating climate-related and environmental disclosures into existing disclosure practices • Integrate climate risk into Basel Pillar 3 disclosures • Encourage client disclosure through ownership of financial assets and active client engagement

17. These could include transition-sensitive sector exposures, internal carbon pricing, implied temperature rise models. For an overview of climate-related financial risk measurement methodologies for banks see BCBS (2021).

SELECTED EXAMPLES

- BaFin Germany, Guidance Notice on Dealing with Sustainability Risks
- Bangladesh Bank, Guidelines on Environmental & Social Risk Management (ESRM) for Banks and Financial Institutions in Bangladesh
- Bank of England/PRA Supervisory Statement, Enhancing banks' and insurers' approaches to managing the financial risks from climate change
- China Banking Regulatory Commission, Green Credit Guidelines
- Dutch Central Bank, Integration of climate-related risk considerations into banks' risk management, Good Practice document
- European Central Bank, Guide on climate-related and environmental risks
- Monetary Authority of Singapore, Environmental Risk Management Guidelines for Financial Institutions

RESOURCES

- NGFS (2020) NGFS Guide for Supervisors: Integrating climate-related and environmental risks into prudential supervision

TOOLKIT

Exploring Greening of Central Banks' Activities

Further development of this Toolkit may follow after further research on this topic has been conducted.

GOAL

Explore the potential for greening different components of central bank's operations to support the greening of the economy.

KEY STAKEHOLDERS

Central banks

RATIONALE

Increasing attention is being paid to the potential of greening central banks' activities and operations. While the thinking around many of these issues is still in the early stages, these are important options to consider when aligning central banks' activities with the greening of the financial system. This toolkit provides a high-level overview of several options for central banks across certain key operations, including monetary policy and portfolio management. It is important to note that many of these options are still under review by the international central banking community, including under the Network for Greening Financial System (NGFS), and may not be deemed feasible (at this stage) depending on mandates, legal environments, or other individual assessments. It should also be noted that much of the experience to date stems from advanced economies, so emerging market and developing economies should carefully consider their local context before moving forward.

Sustainable and Responsible Investment practices in central banks' portfolio management

The adoption of sustainable and responsible investment (SRI) practices by central banks is important for better managing environmental, social and governance (ESG) risks and further greening the financial system, as highlighted by the NGFS in several publications on the topic.[18] Two high-level SRI objectives for central bank portfolios can be identified: a financial objective which aims to address the impact of climate-related and/or ESG-related risks on the portfolio; and an extra-financial SRI objective which aims to address the impact of the portfolio on the environment and society, alongside financial returns.

Depending on these objectives, central banks can broadly consider five different SRI strategies, notably: negative screening (restricting the investment universe on the basis of pre-selected criteria); best-in-class (based on a peer comparison of either positive screening or index-adjusted weighting/ESG tilting); ESG integration (including all financially material ESG criteria in the investment analysis to improve the risk return profile of the portfolio); impact investing (aimed at generating an intentional and quantifiable positive impact alongside financial returns); and voting and engagement (exercising ownership rights to influence company's conduct on ESG issues).

Key examples:

- Banca d'Italia applies ESG policy integration in equity funds
- European Central Bank introduced low carbon equity benchmarks in the pension portfolio
- Deutsche Bundesbank engaged in sustainable investing in third-party portfolios
- Banque de France published a dedicated SRI report

Monetary policy

It is increasingly recognized that climate change has implications for central banks' monetary policy operations. Climate change and its mitigation are set to affect key macroeconomic variables, which are relevant for the conduct of monetary policy across different time horizons. According to the NGFS, climate change can affect the transmission channels of monetary policy, and central banks need to reinforce their analytical toolkit by considering the addition of climate risks to their macroeconomic models and forecasting tools. A recent NGFS report highlighted that central banks can potentially adapt their monetary policy operational frameworks to reflect climate-related risks, and outlined options to explore in three key monetary policy fields: credit operations, collateral policies, and asset purchases (see Table 1 for further details on the NGFS analysis). The evaluation of the appropriateness of these options will require a careful assessment of the local context and the potential unintended consequences of adjustments to central banks' frameworks.

18. See NGFS (2019): A Sustainable and Responsible Investment Guide for Central Banks' Portfolio Management; and NGFS (2020): Progress report on the implementation of sustainable and responsible investment practices in central banks' portfolio management.

Table 1. Selected stylized options for adjusting operational frameworks to climate-related risks

CREDIT OPERATIONS	
1. Adjust pricing to reflect counterparties' climate-related lending	Make the interest rate for central bank lending facilities conditional on the extent which a counterparty's lending (relative to a relevant benchmark) is contributing to climate change mitigation and/or the extent to which they are decarbonising their business model.
2. Adjust pricing to reflect the composition of pledged collateral	Change a lower (or higher) interest rate to counterparties that pledge a higher proportion of low-carbon (or carbon-intensive) assets as collateral or set up a credit facility) potentially at concessional rates) accessible only against low-carbon assets.
3. Adjust counterparties' eligibility	Make access to (some) lending facilities conditional on a counterparty's disclosure of climate-related information or on its carbon-intensive-low-carbon/green investments.
COLLATERAL	
4. Adjust haircuts	Adjust haircuts to better account for climate-related risks. Haircuts could also be calibrated such that they go beyong what might be required from a purely risk mitigation perspective in order to incentivise the market for sustainable assets.
5. Negative screening	Exclude otherwise eligible collateral assets, based on their issuer-level climate-related risk profile for debt securities or on the analysis of the carbon performance of underlying assets for pledged pools of loans or securitised products. This could be done in different ways, including adjusting eligibility requirements, tightening risk tolerance, introducing tighter or specific mobilisation rules, etc.
6. Positive screening	Accept sustainable collateral so as to incentivise banks to lend or capital markets to fund projects and assets that support environmentally-friendly activities (e.g. green bondsor sustainability linked assets). This could be done in different ways, including adjusting eligibility requirements, increasing risk tolerance on a limited scale, relaxing some mobilisation rules, etc.
7. Align collateral pools with a climate-related objective	Require counterparties to pledge collateral such that it complies witha climate-related metric at an aggregate pool level.
ASSET PURCHASES	
8. Tilt purchases	Skew asset purchases according to climate-related risks and/or criteria applied at the issuer or asset level.
9. Negative screening	Exclude some assets or issuers from purchases if they fail to meet climate-related criteria.

Source: Reproduction from NGFS, 2021

Other monetary policy instruments include green reserve requirement policy, which would allow banks to hold fewer reserves (bearing zero or low interest) against green loans; and green-targeted refinancing lines, which offer refinancing for commercial banks at preferred terms for specified green segments of the economy. Central banks could also start considering how economic projections and forecasting could further integrate (longer-term) climate considerations and scenarios.

Key examples

- Peoples Bank of China (PBOC) offers relending and interest subsidies/guarantees for green lending facilities. Green loans are now accepted as part of the standing lending facility (SLF), and green bonds at AA rating are accepted as collateral in its medium-term lending facility (MLF), both of which deliver favorable capitalization and interest rate benefits. The evaluation of banks' green performance is also included in PBOC's macroprudential assessment (MPA) framework, giving banks additional incentive to expand and report on their green portfolios.
- Bank of Russia may use ESG ratings as part of its methodology for setting reserve ratios for lenders. It is considering if financial institutions in Russia may be granted easier access to funding if they improve their environmental, social, and governance standards.
- Swedens Riksbank has decided to apply norms-based negative screening to its purchases of corporate bonds issued by non-financial companies under its quantitative easing programme. As such, it may exclude bonds from issuers that do not comply with universal global standards and norms for sustainability.

Central banks' climate-related financial disclosure

In demonstrating their commitment toward publishing climate-related financial disclosures, central banks can set an important example for the market – in addition to providing transparency into how the financial risks from climate change are having an impact on their activities, and their approach to addressing this. The NGFS is also considering starting further work on this topic, with the aim of building a common framework for central banks' climate-related disclosure practices, aligned with the TCFD recommendations.

Key examples

- **Bank of England (BoE)**: The BoE published its first climate-related financial disclosure in 2020.
- **European Central Bank (ECB)**: The ECB and the 19 Eurosystem banks committed to annually report on the climate performance of their investment portfolios within the next two years, using the TCFD recommendations as the initial framework.

Other central bank activities for greening the financial system

Central banks may have several other tools at their disposal to direct or regulate green financing flows, including macroprudential instruments and green credit allocation policy. This type of regulation or policy instrument is subject to different views by the international regulatory community. To date, these instruments are not widely used by central banks in advanced economies, but some are used by central banks in developing and emerging economies (specifically by central banks which have a dual mandate including development objectives). The suitability and effectiveness of such regulation depends on multiple factors. Current discussions center around: mandate (many supervisory authorities or central banks do not have the mandate to set specific credit guidance and therefore face restrictions when engaging in such regulation); risk and financial stability implications (policies may not be aligned with authorities' risk-based supervisory frameworks and may have the unintended consequence of amplifying risks for individual institutions or creating instability in the system); definitions (many authorities do not have a specific taxonomy or classification system in place which would allow them to identify "green" or "unsustainable" for the purposes of these policies); and the effectiveness of the regulation (the success of credit allocation policies has been disputed[19]).

19. See, for example, the paper on the effectiveness on Green Credit Policy in China.

Green credit allocation or the targeted regulation of financing green projects can include: minimum and maximum credit quotas, requiring banks to allocate a fixed percentage of their loan portfolio to a specified sector (e.g. requiring commercial banks to lend a specific percentage of their overall lending to green projects or a maximum percentage to unsustainable/polluting projects); or central bank assistance to development banks, offering central bank finance to development banks which can increase their lending capacity to lend to green projects.

Macroprudential instruments that have been mentioned as options to explore include countercyclical capital buffers, sector leverage ratios and large exposure restrictions. To note again that the appropriateness or effectiveness of these tools has not yet been established. Macroprudential departments of central banks could also engage in climate-related financial sector stress testing.

Key examples

- **Bangladesh Bank**: Commercial banks and non-bank financial institutions are required to allocate 5% of their total loan portfolio to green sectors.
- **Reserve Bank of India**: Loans to renewable energy companies have been included in the RBI's Priority Sector Loans scheme; 40% of net commercial bank credit must support priority sectors.

RESOURCES

- Asian Development Bank Institute (2018) Central Banking, Climate Change and Green Finance
- LSE Grantham Research Institute and SOAS Centre for Sustainable Finance (2021) Net-zero central banking: A new phase in greening the financial system
- New Economics Foundation (2017) Green Central Banking in Emerging Market and Developing Country Economies
- NGFS (2019) A Sustainable and Responsible Investment Guide for Central Banks' Portfolio Management
- NGFS (2020) Progress report on the implementation of sustainable and responsible investment practices in central banks' portfolio management
- NGFS (2020) Climate Change and Monetary Policy: Initial takeaways
- NGFS (2021) Adapting central bank operations to a hotter world: Reviewing some options

TOOLKIT

Develop and Implement Climate-Related and Environmental Disclosure and Reporting Standards

GOAL

Enhance market transparency and understanding of climate-related and environmental risks and opportunities in order to inform investment processes and facilitate communication with clients, beneficiaries and other stakeholders – with the ultimate goal of facilitating the efficient allocation of capital in the transition to a low-carbon and climate-resilient economy.

DEFINITION

Standards that define supervised entities' obligation to disclose current and forward-looking data and analysis, relevant to their corporate strategy, operations, and performance on relevant climate and environmental issues.

KEY STAKEHOLDERS

Ministry of Finance, central banks, financial supervisory/regulatory authority and relevant public/governmental authorities.

RATIONALE

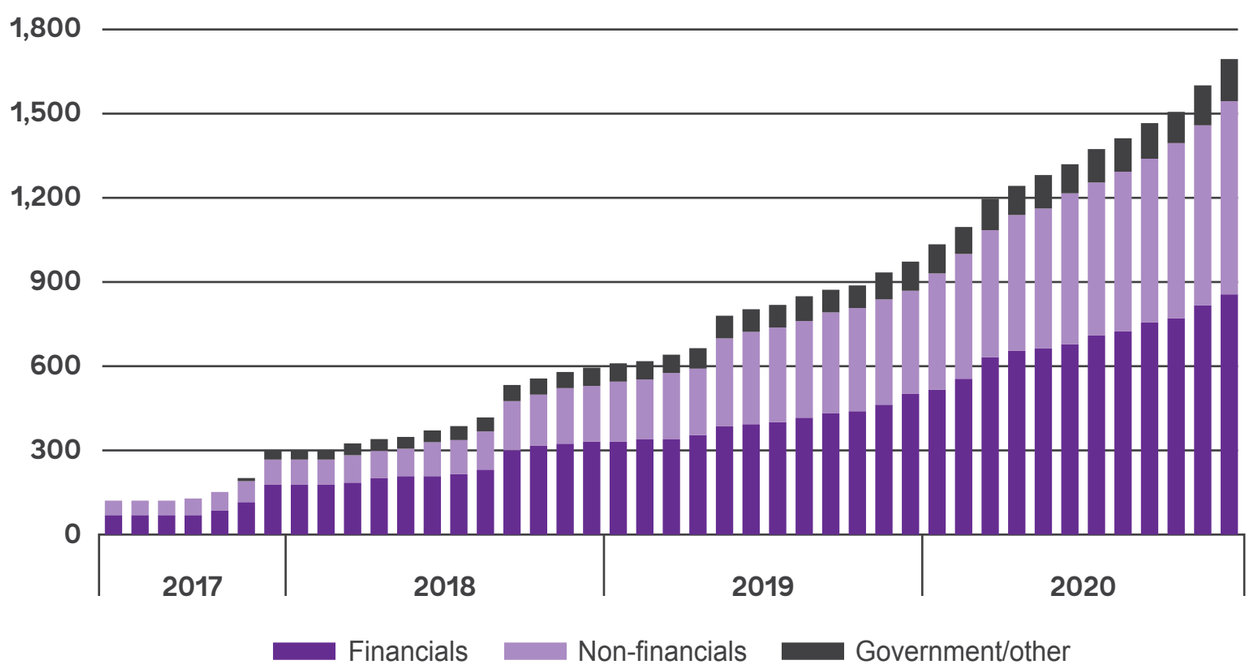
Investors and lenders need adequate information on climate-related and environmental risks and opportunities to understand, price and manage the risk in their portfolios and operations. Climate-related and environmental financial disclosure of both financial institutions and corporates in the real economy is imperative in providing the necessary information for financial market actors to consider climate or environmental-related risks and opportunities and align their capital accordingly. These disclosures have many uses in the investment process. For example, the information disclosed can be integrated in a valuation model, used for screening, to inform thematic investments, or to measure the impact of companies and/or funds. Public disclosure will be an additional incentive for firms to step up their efforts in this space.

IMPLEMENTATION CONSIDERATIONS

Public authorities can stimulate the effective allocation of capital by influencing disclosure and reporting practices. For example, financial regulators can set specific disclosure requirements for financial institutions. Furthermore, conduct or capital markets regulators could play an essential role in supporting and enforcing sustainability reporting and labelling practices for listed companies.

Key international initiatives have already laid the foundations to start implementing disclosure and reporting regimes. To the extent possible, disclosure guidance should be aligned with international frameworks, particularly the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) to enable harmonization and comparability of institutions' climate disclosure or sustainability reporting.

Figure 6. Companies and other organizations committed to support TCFD



Source: TCFD

The process of implementing disclosure standards will entail different phases. Some of these may have to build on one another. The first phase is focused on gathering relevant information, building partnerships and raising awareness around climate and sustainability reporting and disclosure. The second phase focuses on communicating authorities' expectations and building capacity within the sector. Since the availability, reliability and comparability of data is essential, authorities may consider providing capacity building support to help entities collect and report on raw data (particularly in relation to GHG emissions). This could be especially useful for financial institutions to make transparent climate disclosures and identify climate-related transition risks (see toolkit 7). Raw data could also help inform financial institutions' strategies to become "Paris-aligned" (see toolkit 5). Implementing mandatory disclosure and reporting regimes is the final step.

Ahead of making reporting and disclosure mandatory, or where mandating is not feasible, a "comply or explain" approach can be an effective way of engaging companies. Voluntary or mandatory disclosure and reporting schemes may yield fundamentally different outcomes, with general recognition that mandatory regimes may ultimately be more impactful. It is important to establish the mechanisms (e.g., legislation, regulation) through which a regime can be made mandatory early on. Binding regimes require involvement of many different actors with distinctive powers, and it is not always evident where the responsibilities lie. Different stakeholders may include the capital markets regulators (e.g.. for inclusion in listing rules), other financial regulators, central banks, relevant government authorities or the stock exchange.[20]

There are many different types of disclosure and reporting standards, ranging from a narrow climate-related focus to covering green, or sustainability more broadly. It needs to be established what the purpose is and therefore what the relevant scope for the reporting or disclosure regime will be. Authorities should further recognize the distinction between financial and non-financial reporting and the different purposes they serve. Stock exchanges can play a supporting role in promoting sustainability reporting and responsible investment as they are uniquely positioned at the intersection of investors, companies, and regulators. As data availability is often a key issue, it is important to encourage financial institutions to actively engage with organizations that can support bridging the data gaps.[21]

20. For an example of the interplay between different stakeholders and a roadmap towards mandatory disclosure, see the UK Roadmap.
21. Examples include data providers, external reviewers, credit rating agencies and other service providers.

CHECKLIST

PHASE 1 - PLANNING

- Identify relevant stakeholders in the financial disclosure and reporting ecosystem
- Conduct a stock taking of current climate disclosure and sustainability reporting practices in the financial sector
- Assess how climate and environmental disclosures could be captured under existing domestic disclosure and reporting regulatory frameworks
- Evaluate existing international disclosure and reporting initiatives and best practice which could be integrated into national frameworks
- Encourage domestic financial institutions to sign up to the TCFD recommendations
- Identify key data gaps and other data issues (quality, accessibility, comparability)
- Engage with stock exchanges to explore introduction of sustainability reporting

PHASE 2 - IMPLEMENTATION

- Provide financial, reporting or market regulator with mandate to integrate climate-related and environmental risk and opportunities disclosure into regulatory practice (where relevant)
- Publish (supervisory) guidance requesting financial institutions to disclose material climate and environmental risks under existing disclosure regimes (e.g. Basel Pillar 3)
- Build financial sector capacity through active outreach and engagement
- Communicate climate-related disclosure expectations to the wider economy to allow better informed decision making by lenders and investors
- Develop a strategy to fill data gaps and enhance the quality and availability of existing data
- Develop or make use of (existing) green or sustainability taxonomies to enhance transparency and availability of data
- Set out a pathway to make climate-related financial disclosure mandatory
- Update listing rules to make sustainability reporting mandatory
- Consider mandating climate-related disclosure for the wider economy (i.e. non-financial corporates)

PHASE 3 - MONITORING & EVALUATION

- Implement mechanisms or regulation to monitor implementation and compliance with disclosure requirements
- Continue monitoring international harmonization of disclosure and reporting standards
- Undertake efforts to make relevant government or public data more readily available
- Make resources available to invest in data solutions

SELECTED EXAMPLES

CATEGORY	INITIATIVE	DESCRIPTION
Disclosure and reporting initiatives and standards	Taskforce on Climate-Related Financial Disclosures	Principal climate-related disclosure initiative, considered baseline best practice for aligning domestic climate-related disclosure regimes.
	Sustainability Accounting Standards Board (SASB)	Industry-specific standards which identify minimal set of financially material sustainability topics.
	Sustainable Stock Exchanges Initiative	Support stock exchanges with issuing ESG guidance for their listed companies.
	Climate Disclosure Standards Board	Focus on the integration of climate-related information into mainstream financial reporting
Disclosure and reporting rules and regulations	China ESG Disclosure Policy	The China Securities Regulatory Commission and the Ministry of Environmental Protection have mandated all listed companies to disclose ESG risks associated with their operations.
	China Green Loans	China Banking and Insurance Regulatory Commission introduced the Green Credit Statistics System, which includes definitions for green loans and a tool for banks to calculate the environmental benefits against seven parameters for green loans.
	France energy transition law	First mandatory climate change-related reporting for asset owners and asset managers (art. 173)
	EU Disclosure Regulations	Financial services / non-financial reporting
	UK FCA Climate-disclosure rules	Proposals outlining new climate-related disclosure requirements for premium listed issuers.
	The Philippines Sustainable Finance Framework Circular	The Bangko Sentral ng Pilipinas (BSP), the Philippines' Central Bank, has issued guidance for banks to integrate climate and other ESG factors, including by providing detailed ESG disclosure in their annual reports

Box 4. Sustainability accounting standards

A related area which is not specifically covered in this report, but which is getting increased attention from both accounting standard setting bodies and investors, is the integration of sustainability or climate considerations into accounting standards to ensure that risks and opportunities are reflected in companies' financial statements. Currently, there is often a disconnect between what companies express in the more qualitative sections of the annual report (where TCFD is mostly captured), and the numbers in the actual financial statements. Ensuring that accounting standards and company accounting consider these risks in their assumptions is therefore imperative in ensuring these issues are properly reflected in the financials or annual reports. A key development in this regard is that the International Financial Reporting Standards (IFRS) Foundation has launched a project for the development of global sustainability reporting standards.[22]

Box 5. Nature-related Financial Disclosures

Beyond TCFD, the Taskforce on Nature-related Financial Disclosure (TNFD) was established to build on the approach developed by TCFD to assess financial risks related to nature decline, including biodiversity loss. TNFD is a relatively newer concept compared to TCFD but there is a growing interest in better understanding nature-related risks and how these risks relate to climate-related risks. In September 2020, the Informal Working Group on TNFD was launched and the UN Secretary General announced that the UN would convene leaders in a global summit on nature risks. The informal Working Group intends to further develop and pilot the TNFD Framework between 2021 and 2023.

RESOURCES

- Asset Owners Disclosure Project
- Carbon Disclosure Project
- Climate Disclosure Standards Board Framework
- EC Guidelines on non-financial reporting: Supplement on reporting climate-related information
- EU Regulation on sustainability-related disclosures in the financial services sector
- Global Reporting Initiative
- Sustainability Accounting Standards Board
- Sustainable Investment: Best Practice Disclosure Checklist for Pension Funds (World Bank)
- Taskforce on Climate-related Financial Disclosures
- Taskforce on Nature-related Financial Disclosures
- TCFD Knowledge Hub
- UK Roadmap towards climate-related mandatory disclosures
- UNEP FI TCFD Pilot

22. For more information on the IFRS global sustainability reporting standard see the project page.

TOOLKIT

Develop and Adopt a National Green Taxonomy

GOAL

Enhance market transparency and facilitate the alignment of capital flows with low-carbon, climate-resilient energy and resource efficient circular activities.

DEFINITION

A green taxonomy is a classification system to identify environmentally sustainable economic activities that substantially contribute to achievement of international and national climate or environmental goals, while causing no harm to environmental or social objectives.

KEY STAKEHOLDERS

Ministry of Finance, other relevant ministries, financial supervisory/regulatory authority, financial sector entities, external experts, non-governmental organizations, societal representatives and academia.

RATIONALE

A green taxonomy offers a uniform and harmonized way of determining what economic activities can be considered environmentally sustainable[23]. It can perform a variety of functions: be a core building block of a country's green finance objectives; support financial actors in making informed decisions on environmentally friendly investments, scaling up finance for climate mitigation, adaptation and other environmental goals; facilitate reliable and comparable disclosures relating to sustainability risks and opportunities; and provide a consistent starting point for standard setters and product

23. The World Bank is developing a series of Country Climate and Development Report, which is expected to present a typology of decarbonization and adaptation policies. This may be a useful reference in the future to inform the development of a country's green taxonomy.

developers. It can also enable tracking and reporting of public expenditures and/or private investments addressing specific environmental or climate goals. A taxonomy is an important complement to actions taken by authorities to align environmental regulations and fiscal policy to support greening of the real economy. A taxonomy can further promote market integrity by reducing “greenwashing”. It also reduces fragmentation resulting from market-based initiatives and national practices which lack coherency.

For policymakers, benefits include: providing a common language for investors, issuers, and real economy actors; identifying areas of underinvestment and bridging the funding gap; facilitating the development of a pipeline of green projects in accordance with national priorities for environmentally sustainable development; providing a reference for policymakers as they develop strategies to achieve national sustainable development commitments (e.g., NDC/SDG agendas); and improving associated systems for tracking and measuring finance flows. It could also be used by banks and other financial institutions, investors, and issuers as a basis to create new financial products (E.g., green bonds or labelled Exchange Traded Fund). For use by other key non-public actors, see the World Bank Taxonomy Guide referenced in the Resources section below.

IMPLEMENTATION CONSIDERATIONS

A national green taxonomy should be developed jointly by financial sector supervisors/regulators, in close coordination with the national authorities responsible for defining the country's climate and environmental agenda and priorities. Climate, environmental, energy and sector technical experts and scientists also need to be involved from an early stage. Consultation with key stakeholders, including industrial corporates, cooperatives, small and mid-size enterprises (SMEs), financial services providers, and so on, is highly recommended. Furthermore, it is important to allocate overall responsibility for taxonomy development to a steering committee, led by a relevant authority or government department (such as the Ministries of Finance or the Ministries of Environment, or a combination). Such a committee could be part of a broader national taskforce or platform on green finance (see toolkit 3). At the outset, it needs to be considered how the taxonomy could be integrated into regulation to ensure adherence and transparency and to support potential enforcement.

Governments are advised to engage with existing taxonomies which can serve as a helpful reference point or even a full basis for the development of a national taxonomy, with modifications depending on the national context. At present, the European Union (EU) taxonomy for sustainable activities may be the most comprehensive. The four main elements of the EU taxonomy could provide a good basis for harmonization of taxonomies. Governments are advised to ensure their taxonomies adopt a similar framework or approach in terms of specifying the explicit environmental goals, listing the environmental activities, identifying metrics to measure performance, and defining the performance criteria where needed. In an international context, ensuring that the taxonomy is aligned with international taxonomies will enable international investors to allocate capital to those companies that meet the requirements of the taxonomy.

For developing countries in particular, interlinkages with social issues require due consideration. For some climate mitigation activities (e.g., certain renewable energy sectors), GHG emissions are so low that the inclusion of that activity may not be necessary. Adaption activities are, by their nature, more country specific and will have to be selected for inclusion on a national basis.

The mobilization of investment relies on the economy being in a position to bring ideas to market and to scale up, requiring a medium to long-term strategic perspective. Careful planning is needed to clearly determine the scope of the taxonomy upfront and how it is to be phased. The scope, level of detail and phasing of the taxonomy could differ, depending on local socio-economic and environmental risks and opportunities. The EU Taxonomy provides a high level of detail across all environmental objectives and can be applied at the economy level, company level and asset level. Its distinguishing features are its science-based targets presented in the form of a detailed index that defines Paris Agreement-aligned performance criteria across high emitting economic activities. This level of detail helps to meet investors' information needs across a range of investment portfolios. Other taxonomies are under development in a number of countries including China, Malaysia, Singapore and the ASEAN union. The Malaysian taxonomy is more principle-based, identifying the principles that will guide the identification of green assets. Principle-based taxonomies tend to rely on the exclusion of 'prohibited' activities as an alternative to technical screening criteria. Singapore plans to follow the same approach as the EU taxonomy.

Discussion is ongoing on whether taxonomies could also serve to identify potential (financial) risks to financial institutions, thereby functioning as a “financial risk taxonomy” for regulatory or supervisory purposes. Such a taxonomy would likely need to include “unsustainable” economic activities, to allow for these current and future financial risks to be identified. In this way, a comprehensive taxonomy could be used by financial supervisors or regulators as a tool to assess the stability or riskiness of financial institutions and provide a deeper understanding of how to address the potential financial vulnerabilities.

Figure 7. Potential scope of the taxonomy

Climate Change Mitigation

Climate Change Adaptation

Sustainable Use of Water and Marine Resources

Circular Economy

Pollution Prevention

Healthy Ecosystem

CHECKLIST

PHASE 1 - PLANNING

- Set up dedicated technical working group(s), led by a relevant authority/steering committee
- Define the strategic objective of the taxonomy
- Select environmental goals relevant to the country's sustainable development priorities and agenda
- Identify which domestic initiatives at the international level may provide a starting point or the basis for the national (regional) taxonomy
- Decide on a regulatory approach that may be adopted to strengthen and enforce the taxonomy's requirements
- Take stock of complementary efforts in the country including existing initiatives, incentives and mechanisms to finance green activities

PHASE 2 - IMPLEMENTATION

- Make initial specification of sectors, sub-sectors and specific activities within sectors which potentially contribute to a country's climate mitigation, adaptation and other environmental objectives
- Develop technical screening criteria (drawing on international examples such as the EU taxonomy) or determine prohibited activities (drawing on examples such as China and ASEAN taxonomies)
- Engage with external sectoral experts and market stakeholders
- Consider publishing a draft taxonomy for consultation ahead of final publication to gather feedback and ensure broad support
- Identify intended target users and beneficiaries, their roles, and potentially their respective responsibilities in the implementation and use of the taxonomy
- Outline reporting guidelines and potential disclosure guidelines

PHASE 3 - MONITORING & EVALUATION

- Monitor achievement of sectoral sustainability targets and limits
- Identify any additional implementation tools or necessary support and capacity building needs
- Put in place a regular update process for the taxonomy to take account of various developments e.g., technological changes
- Consider whether/how the taxonomy can be further integrated in national regulatory frameworks

SELECTED EXAMPLES

TAXONOMY	INITIATIVE
China	Introduced three green taxonomies, including the guidelines for green loans by the China Banking and Insurance Regulatory Commission (2012), the green bond catalogue by the PBOC (2015) and the catalogue of green industries by the National Development and Reform Commission of the People's Republic of China (2019).
Climate Bonds Initiative	Developed a Climate Bonds Taxonomy a guide to climate-aligned assets and projects.
EU Taxonomy for sustainable activities	The EU taxonomy is a classification system, establishing a list of environmentally sustainable economic activities. It is an important enabler to scale up sustainable investment and to implement the European Green Deal, by providing appropriate definitions to companies, investors and policymakers on which economic activities can be considered environmentally sustainable. The EU taxonomy regulation came into force in July 2020. It establishes the framework for the EU taxonomy by setting out four overarching conditions that an economic activity has to meet in order to qualify as environmentally sustainable.

RESOURCES

- Bangladesh (2020) Green Taxonomy & Sustainable Finance Taxonomy
- Climate Bond Initiative (2021) Climate Bonds Taxonomy
- EU (2020) EU Technical Expert Group final report on EU taxonomy
- EU (2020) EU Taxonomy Regulation
- EU (2021) Climate Change Mitigation (Annex I) and Adaptation (Annex II) Delegated Acts
- ICMA (2018) ICMA Green Bond Principles
- ICMA (2021) Overview and Recommendations for Sustainable Finance Taxonomies
- Government of China (2020) China Green Bond endorsed project Catalogue (2020 Edition for Consultation)
- Mongolia (2020) Mongolian Green Taxonomy
- World Bank (2020) World Bank Guide Developing a National Green Taxonomy

TOOLKIT

Greening a National Development Bank or Other Domestic Public Finance Institution

GOAL

Leverage national development banks or other domestic public financial institutions to mobilize capital (with a focus on mobilizing private investment) towards green finance.

DEFINITION

Reallocate domestic public finance entities' capital to bridge the financing gap for a country's climate and environmental objectives

KEY STAKEHOLDERS

Ministry of Finance, Ministry of Development, Ministry of Environment, National or Local Development Banks, other public finance institutions

RATIONALE

As the link between domestic governments, international finance and local private sector actors, National Development Banks (NDBs) and other domestic public finance institutions occupy a key position in the green finance landscape. Even if NDBs are often small in size, these institutions can already have a major influence on the country's development and infrastructure as well as the government's climate-related plans and policies, due to their proximity to government. A much-needed additional benefit in response to the COVID19 crisis is that NDBs can play an important countercyclical role, providing credit to compensate for a temporary reduction in loans from private sector financial institutions during times of economic downturn. NDBs generally have the institutional support from governments and the understanding of local sectors needed to provide technical support and mobilize (private) investments. Therefore, instead of creating a new entity, governments could adapt existing public banks to increase and mainstream green finance within their operations. The focus may primarily be on development banks, but this could equally apply to public banks operating as infrastructure, industrial or commercial banks.

IMPLEMENTATION CONSIDERATIONS

Many of the implementation considerations and specific actions to establish a new green finance entity (see toolkit 13) can read across to greening an existing public finance entity. However, there are specific considerations to be considered for repurposing existing NDBs or other related entities, which will depend on the national context and the initial set up of the relevant institution. To ensure that existing NDBs or other related entities can be effective in promoting green finance, a crucial starting point is to assess the alignment of current mandates with key national climate and environmental goals. Rectifying misalignment with national climate and environmental goals may mean refocusing operations and recalibrating portfolios. Ensuring a consistent and coherent institution-wide approach will determine the credibility and success of the new strategy. For example, this would ensure that departments directly engaged in climate finance are not counteracting climate goals through the financing of carbon-intensive activities. An increased focus on climate and green projects will allow NDBs to attract additional (long-term) funding through tapping the (global) green bond markets.

CHECKLIST

PHASE 1 - PLANNING

- Map NDBs and their structure, mandates, main financing activities etc.
- Identify the key barriers they are facing in scaling up/allocating investment for climate goals
- Assess if NDBs need support to access grants and concessional climate finance from international climate funds
- Assess which actions will have the most impact in helping to achieve climate and environmental goals and how barriers can be removed

PHASE 2 - IMPLEMENTATION

- Set a clear, strong, and coherent mandate that is aligned with climate and environmental goals
- Where possible, provide NDBs with specific and quantitative investment objectives aligned with climate and environmental goals (e.g. NDC) and a minimum climate and green finance target (e.g. with sub-targets for adaptation/mitigation)
- Encourage NDBs to communicate a public commitment and measurable (financing) goals to enhance accountability and deliver on the mandate
- Assess whether a restructuring of the institution is required to fulfil the mandate
- Consider whether additional financial mechanisms are needed to unlock NDBs' green finance (e.g. government guarantees, risk-sharing tools)
- Support NDBs to access (international) green bond markets
- Ensure the Board of Directors and Executive Board are fully bought into the new strategy (and consider linking remuneration or incentives to delivery of strategy)
- Provide for or facilitate technical assistance to enhance NDBs' abilities to identify and assess project opportunities (with specific attention for adaptation)
- Develop training and awareness programs for all staff to enhance understanding

PHASE 3 - MONITORING & EVALUATION

- Implement monitoring, verification and impact reporting mechanisms
- Develop adequate climate finance tracking mechanism to track the financing amounts
- Consider additional support measures such as staff incentive systems, exchange programs with MDBs

SELECTED EXAMPLES

NDB	INITIATIVE
Belize Development Finance Corporation (DFC)	The DFC of Belize is seeking to achieve climate and environmental resiliency in all its programs and operations.
Brazil's National Bank for Economic and Social Development (BNDES)	Environmental sustainability is a clear focus in BNDES' recently revised mission and strategy. Under its Social and Environmental Responsibility Policy (PRSA 2018-2020) BNDES aims to formalize its public commitment and targets to deliver Brazil's NDC.
Development Bank of Southern Africa (DBSA)	DBSA's Climate Change Policy Framework describes the bank's role in contributing to South Africa's NDC and sets a climate finance target of a minimum of 35% of annual lending by 2022 (sub-targets of 70% for mitigation and 30% for adaptation). It also developed a detailed reporting framework for all development aspects and an approach to integrate climate considerations into each stage of the project cycle.
North American Development Bank	The North American Development Bank, is both a Green Bank and a Development Bank, as all its activities are focused on low-carbon and climate resilient investments

RESOURCES

- AFD (2020) Can development banks step up to the challenge of sustainable development?
- AFD (2020) Climate change and development bank project cycles
- AFD (2020) Piloting and scaling up clean energy transitions: the role of development finance institutions
- AFD (2020) Scaling up public development banks' transformative alignment with the 2030 agenda for sustainable development
- AFD Global Database of Public Development Banks
- IDB (2017) Supporting National Development Banks to Drive Investment in the Nationally Determined Contributions of Brazil, Mexico, and Chile
- CPI & IDB (2017) National Development Banks and Green Banks
- NRDC (2017) National Development Banks and Green Investment Banks: Mobilizing finance in Latin America and the Caribbean
- OECD (2019) Scaling up climate compatible infrastructure: Insights from National Development Banks in Brazil and South Africa
- IDB (2019) Build or Renovate? The decision to establish a new Green Bank, or "green" an existing National Development Bank

TOOLKIT

Create a National Green Finance Entity or Green Bank

GOAL

Address the financing gap to meet national climate and environmental goals by facilitating private investment into domestic low-carbon and environmentally resilient development.

DEFINITION

A green (investment) bank is generally defined as a public, quasi-public or non-profit entity established specifically to facilitate private investment into domestic low-carbon, environmentally-resilient infrastructure.[24]

KEY STAKEHOLDERS

Ministry of Finance, Ministry of Environment, Ministry of Development or other relevant policymakers

RATIONALE

Public sector funding alone cannot meet the financing needs to achieve climate and environmental objectives. Dedicated national green finance entities or green banks can address the need for increased domestic green finance, with a specific focus on scaling up private finance. These entities could be considered as a type of public Strategic Investment Fund (SIF), providing debt or equity financing for specific green objectives.

24. Definition based on OECD report: Green Investment Banks – Scaling up private investment in low-carbon climate-resilient infrastructure (2016).

IMPLEMENTATION CONSIDERATIONS

Before deciding whether to establish a new entity, relevant public authorities should assess whether existing national public finance institutions could be repurposed to include an objective on scaling up private finance for green objectives (see toolkit 12). Establishing a green bank will require significant resources and therefore requires extensive research and market assessment, to ensure public funds are used in the most efficient way, and that the newly established entity addresses specific local market barriers.

A green finance entity or green bank can differ with regards to their specific goals and structure depending on the local context, but should aim to achieve the following objectives:

- Have a specific (semi) independent mandate to mobilize green investment: institutions should have the authority, independence and flexibility to design and implement innovative financing and transaction structures to close green finance investment gaps.
- Mobilize private finance: a key objective is to deploy public capital to leverage private investment efficiently, using interventions to increase risk-adjusted returns in order to enable private sector transactions. Green banks use their own balance sheet to maximize the contribution of private sector capital by playing a catalyzing role in enabling transactions and generating demand.
- Pursue financial performance and be self-sustainable: the goal of green banks is to finance projects that are commercially viable. They should seek a financial return on their investments and avoid concessional financing, thereby building a market and demonstrating to private actors the commercial opportunities of green and clean energy financing.
- Demonstrate additionality: A key priority is to avoid crowding out other (private) investment or competing with other market actors. By bridging specific financing gaps and addressing investment barriers or market failures, green banks should facilitate transactions that could not be supported without their involvement.

CHECKLIST

PHASE 1 - PLANNING

- Identify local market barriers and financing gaps
- Deliver market assessment informing the optimal target model, including sectors, technologies, products and customer base
- Engage with experts and appoint external advisors where necessary[25]
- Start scoping green bank business plan

PHASE 2 - IMPLEMENTATION

- Identify sources for initial capitalization and startup costs
- Decide suitable structure and governance model (public, quasi-public or independent/non-profit entity)
- Determine the level of government representation in governance structure
- Assess long term funding sources and strategy
- Identify priority sectors and customer segments
- Set mandate and objectives in line with domestic climate strategy, including the NDC
- Choose tools and financial and non-financial instruments to achieve objectives
- Support capacity building to increase readiness to use such tools and instruments
- Determine additional objectives (social benefits, workforce development)

PHASE 3 - MONITORING & EVALUATION

- Use design measurement, reporting and verification tools to track impact and use of funds
- Report to the market and shareholders on impact and performance
- Consider other potential measures to support the development of the funding structure over time

25. For example, MDBs, Coalition for Green Capital, Green Bank Network

SELECTED EXAMPLES

COUNTRY	GREEN BANK ENTITY
Australia	Clean Energy Finance Corporation (established in 2012)
Malaysia	Green Technology and Climate Change Centre (established in 2010)
New Zealand	NZ Green Investment Finance (established in 2019)
Southern Africa	Climate Finance Facility (established in 2019)
United States	Connecticut Green Bank (established in 2011)
United States	New York Green Bank (established in 2014)

RESOURCES

- Coalition for Green Capital Resource Library
- Coalition for Green Capital (2017) National Green Banks in Developing Countries: Scaling Up Private Finance to Achieve Paris Climate Goals
- Coalition for Green Capital (2017) Massachusetts Green Bank business plan
- Duke Nicholas Institute (2018) Beyond Financing: A Guide to Green Bank Design in the Southeast
- Green Bank Network Knowledge Center
- Green Bank Network, NRDC (2018) How Green Banks assess and report impacts
- IFC, Eco Business Fund and the Latin American Federation of Banks (FELABAN) (2017) Green Finance Latin America 2017 Report
- NRDC, CGC, CFI (2016) Green & Resilience Banks: How the Green Investment Bank Model can play a role in scaling up climate finance in emerging markets
- OECD (2016) Green Investment Banks: Scaling up private investment in low-carbon, climate resilient infrastructure
- OECD (2014) Lessons from established and emerging green investment bank models
- OECD (2015) Green Investment Banks: Policy Perspectives
- Rocky Mountain Institute (2018) Beyond direct access: How national Green Banks can build country ownership of climate finance

TOOLKIT

4

Stimulate Corporate Green Bond Issuance[26]

26. The actions set out in this toolkit could equally apply to other sustainability, blue or transition-related bonds.

GOAL

Scale-up private finance for climate-related and environmental projects through the development of (local) green bond markets.

DEFINITION

Green bonds are any type of bond instruments where the proceeds will be exclusively applied to finance or re-finance (in part or in full) verified new and/or existing eligible climate-related and environmental projects.

KEY STAKEHOLDERS

Capital market regulatory authority, industry associations

RATIONALE

Standards and guidance by regulatory bodies can raise visibility and awareness of green bonds as well as guide the bond issuance process. This can include guidance on (or requirements for) definitions, management and use of bond proceeds, reporting, and incentive measures. Regulators and policymakers have several tools at their disposal to drive the development of green bond markets and stimulate domestic bond issuance, as described below.

IMPLEMENTATION CONSIDERATIONS

The development or adoption of green bond guidelines and standards will be a key starting point for the development of green bond markets, and a prerequisite for many of the other actions described below. It is recommended to align with internationally recognized standards and definitions, such as the International Capital Market Association's (ICMA) Green Bond Principles. This will allow for rapid and effective implementation and ensure international comparability. A nationally adopted or sector-specific taxonomy of green activities will provide further clarity on which activities or assets can be classified as green, and reduce the likelihood of greenwashing (see toolkit 11). Regulators and/or policymakers can endorse, cooperate with, or fund work on the development of principles and standards for green bonds. This will require the involvement of market actors, to ensure that they fit the needs of the market. The suitability of different approaches may depend on local circumstances (e.g. the maturity of local frameworks or markets). A primary example of a mandatory approach is the EU Green Bond Standard, which will soon require the economic activity or activities that a bond finances to be aligned not only with ICMA Green Bond Principles but also with the EU Taxonomy. These green bond standards and frameworks aim to enhance the effectiveness, transparency, comparability and credibility of the green bond market and to encourage the market participants to issue and invest in green bonds.

One important consideration is whether the bond will be issued in local or foreign currency denomination. This will largely depend on the maturity of the local capital market and the domestic investment appetite for green bonds. Authorities could provide guidance to facilitate issuers in determining the currency denomination of the bonds.

Green bonds may (initially) have higher transaction costs than vanilla equivalents, due to the higher cost of compliance with regulations or international standards; the securing of an independent review of the green bond framework; the cost of tracking and reporting on the underlying investments to bondholders; the calibration of sustainability performance targets; and the annual audit of progress. Concessional funds could support capacity building or offset part of these fixed costs. These incentives could often play an important role in removing the "fear of high costs" for first-time or small issuers, and can incentivize new groups of issuers to come to the market.

Governments can further stimulate market development by supporting aggregation and securitization. To access green bond markets, activities and assets need to be aggregated and packaged to reach the size that investors are demanding. This is often necessary for smaller scale renewable energy and energy efficiency projects. Authorities can support such projects by, for example, providing standards for loan contracts or other procedures to create consistency, which improves the ability of packaging assets into securities. Other support could include capacity building workshops, such as those organized by the Thailand Securities and Exchange Commission and the Securities Commission Malaysia to encourage the establishment of local external review providers. Furthermore, authorities could consider collaborating with stock exchanges to share knowledge and build the capacity of existing issuers that want to issue labeled bonds. Some stock exchanges have programs to reduce listing requirements for labeled bonds and will support new and existing issuers to help bring these bonds to the exchange.

Some authorities have introduced tax incentives for both issuers and investors to enhance the attractiveness of issuing and investing in green bonds. However, the appropriateness of introducing tax or other incentives is dependent of the country or situation, and should therefore be designed with careful consideration of local policy context and circumstances.

Policymakers can also grow the green bonds markets by providing support on the demand side. Governments could provide guidance for investment funds or sovereign wealth funds to promote demand for these bonds. Although still subject to different views, some central banks have signaled they may include green criteria in their asset purchasing programs, particularly as these programs have expanded in light of COVID-19's impact on global capital markets. By putting in place such mandates, policy makers signal to bond issuers that there is robust demand for their green assets.

Box 6. Sustainability-linked bonds

Sustainability-linked bonds are instruments which incentivize the borrower's achievement of ambitious, predetermined sustainability performance objectives, measured using key performance indicators. Sustainability-linked bonds are different from green bonds in that it is a "performance-linked" instrument (rather than a "use-of-proceeds" instrument), with interest rates or a refinancing mechanism tied to achieving sustainable goals. Unlike green bonds, proceeds of sustainability-linked bonds are not required to be ringfenced. A sustainability-linked bond is a relatively new type of instrument, but is increasing in popularity as a way to align borrowers' sustainability profile with lending terms.[27]

27. Increasing attention is also being focused on "transition bonds". As these are currently not covered by internationally recognized standards, they are out of scope of this toolkit. However, the ICMA has published a handbook on Climate Transition Finance, which provides guidance for issuers of these types of instruments.

CHECKLIST

PHASE 1 - PLANNING

- Develop (together with the sector) definitions, standards, and principles for green bonds or sustainability-linked bonds and encourage alignment with international standards
- Consider disclosure guidance, development and use of taxonomies to increase transparency and market discipline

PHASE 2 - IMPLEMENTATION

- Make budget available to reduce transaction costs, in particular for small and first-time issuers
- Create enabling conditions to stimulate aggregation of loans and projects (i.e. standardization)
- Support securitization by providing standards for loan contracts/procedures to create consistency
- Engage with relevant stakeholders in the financial ecosystem to build support and gather feedback
- Create awareness and capacity building programs in the financial sector and real economy to enhance familiarity and stimulate issuance
- Work with stock exchanges to explore further enabling opportunities
- Set a reference benchmark for the domestic market by issuing a green or sustainability-linked sovereign bond

PHASE 3 - MONITORING & EVALUATION

- Monitor whether reporting is in line with the predetermined green bond, sustainability-linked bond or green taxonomy framework
- Support the development of transparent verification and certification mechanisms (potentially by making public budget available for service providers)
- Consider use of enforcement measures in case of greenwashing
- Evaluate adequacy of green bond framework through, for example, evaluation and sector engagements

SELECTED EXAMPLES

COUNTRY/REGION	INITIATIVE
ASEAN	ASEAN Capital Markets Forum (ACMF) developed and released the ASEAN Green Bond Standards in 2017.
Brazil	FEBRABAN (Federação Brasileira de Bancos), the Brazilian Federation of Banks, developed voluntary guidelines for green bond issuers in Brazil
China	Different Chinese financial regulators developed a series of regulations covering different green bond issuer types.
European Union	The EU Green Bond Standard requires the economic activity or activities that a bond finances to be aligned with the EU Taxonomy.
Mexico	Mexico's Green Bond Principles are the official reference point for listing green bonds on the Mexican Stock Exchange.
Morocco	After being tested on a few issuances the Moroccan Capital Markets Authority's Green Bonds Guidelines are now being transformed into regulation and incorporated into the Capital Markets Rulebook.
Various	The Securities Commission Malaysia, Monetary Authority of Singapore and Hong Kong Monetary Authority provided grant schemes to subsidize the cost of external reviews.

RESOURCES

- ICMA (2018) Green Bond Principles
- ICMA (2020) Sustainability-Linked Bond Principles
- ICMA (2020) Climate Transition Finance Handbook
- IDB (2019) Transforming green bond markets: Expand Green Bond Issuance in Latin America and the Caribbean (IDB)
- SBN, IFC & Climate Bonds Initiative (2018) Creating Green Bond Markets – Insights, Innovations, and Tools from EMs

TOOLKIT

Issue Green Sovereign Bonds

GOAL

Raise capital to fund climate mitigation, adaptation and other environmental projects, and stimulate the development of local green bond markets.

DEFINITION

Green sovereign bonds are a type of bond instrument (i.e. marketable debt) issued by a central government, where the proceeds will be used to finance or re-finance specific green projects.[28] [29]

KEY STAKEHOLDERS

Ministry of Finance[30]

WHY IS THIS IMPORTANT

Green bonds have the potential to provide a strong signal of a country's commitment to meeting its climate goals and green growth objectives. They could be an effective tool for governments in raising capital to finance their NDCs or sustainable projects, and there may be numerous other benefits to issuing a green sovereign bond in addition to attracting finance[31]. For example, they can help governments support local green finance market development by

28. See ICMA Green Bond Principles.
29. While several countries have had experience in issuing sovereign green bonds, sustainability-linked sovereign bonds are a new type of instrument with no known country issuance to date.
30. As green bonds are tied to central government debt, the Ministry of Finance is typically the only entity legally allowed to issue these instruments. Other relevant ministries typically help identify eligible projects, or work with the Ministry's Debt Management Offices (DMO) to monitor impact and execute transactions.
31. For a comprehensive overview, see Climate Bonds Initiative (2017).

raising the profile of green bonds with potential issuers. Sovereign green bonds that have been issued in emerging markets to date have had a slightly longer maturity profile than the sovereign's conventional bond portfolio; in addition, some emerging markets have been able to further diversify their investor base through the issuance of certified green bonds, tapping into growing global investor interest in these assets.

Previous sovereign green bond issuances in hard currency have helped attract a wide range of global investors (with green or socially responsible mandates), broader than the usual domestic investor base. In turn, this can help bring down the cost of capital. However, it is important to note that there is no conclusive evidence on the existence of a "green premium" (or "greenium"), i.e. the assertion that green bonds enjoy a pricing advantage over vanilla equivalents. Therefore, authorities should be cautious if the reason for issuing a green bond is to attract cheaper financing.

Typical sectors financed by use of proceeds bonds are energy efficiency, renewable energy, sustainable land use, waste and water treatment, low-carbon transportation and climate adaptation. Proceeds can also be used for intangible assets such as green tax exemptions, subsidies, research and innovation or data services.

Green bond issuance should be a complement to other government climate and environmental action and infrastructure, not an alternative. Credible policies that support a low carbon transition are an important foundation to further develop the green financial markets.

IMPLEMENTATION CONSIDERATIONS

An important consideration is whether the sovereign bond will be issued in local or foreign currency denomination. Many emerging market or developing country governments which have issued a sovereign green bond have decided to do so in 'hard currencies' including USD and euro. This usually allows the issuer to attract a broader global investor base, or provides an alternative when local bond markets are not sufficiently developed yet. However, any foreign currency issuance increases the currency risk[32] of the government's portfolio. Domestic issuance can help to kickstart a local green market, and supports the creation of a new green asset class for local investors looking for certified green opportunities in their home currency or domestic market.

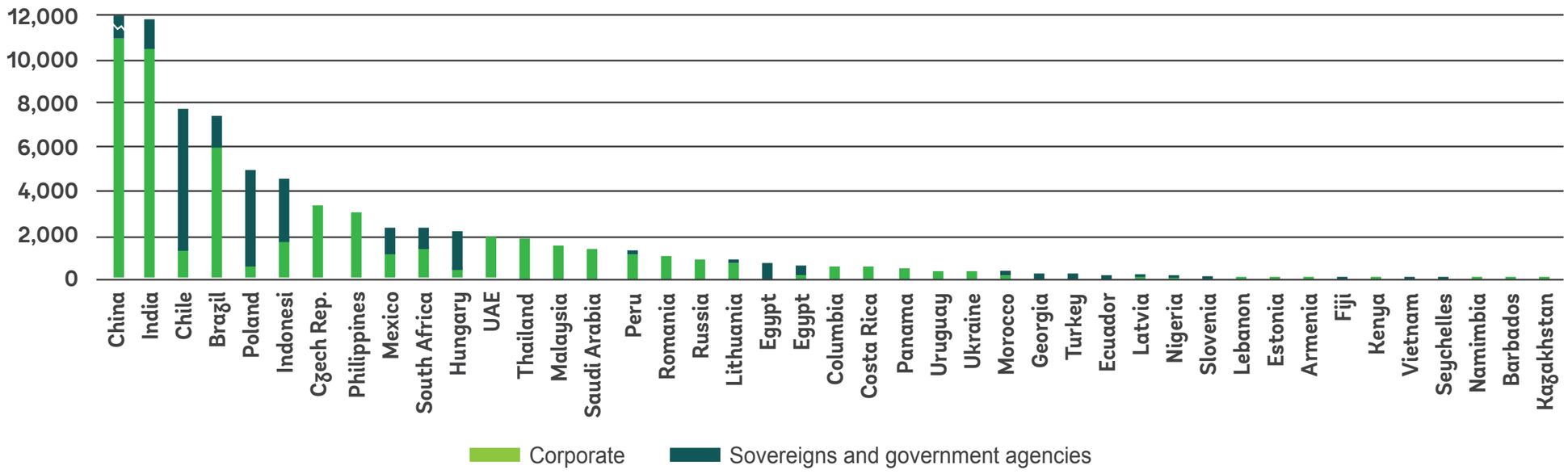
The initial issuance of a sovereign green bond will require upfront and ongoing resources in addition to the usual costs associated with the preparation of a regular government bond. A green bond requires a governance framework, reporting and monitoring systems, and external verification to support the issuance. Although the preparation costs could be higher initially, once the process is in place, the additional costs for issuing the next green bond will be minimized. The World Bank can provide a range of technical support tools at the policy and transactional level, including project identification, framework development, structuring, and reporting.[33]

Although similar in process to that for a standard corporate green bond, additional steps may need to be considered when issuing a sovereign green bond. The authority leading the process (typically the Ministry of Finance) should take into account these specific complexities, as this will influence its structuring and other aspects of the issuance. The issuance will likely include multiple projects or assets, and therefore the involvement of a range of different ministries (e.g., energy, transportation, infrastructure, environment) that are involved in identifying eligible assets.

A country's Debt Management Office (DMO), which is usually part of the Ministry of Finance and has a core public debt management mandate, could play an important role in the issuance of sovereign green bonds, while also facilitating broader green finance developments. The DMO can engage in three main areas: (a) introduce green or ESG-related borrowing instruments to fund the government; (b) use DMO's convening power with market participants to increase the visibility of government initiatives that are related to green goals or broader sustainable development issues; and (c) leverage the DMO's financial expertise to execute the green bond transactions or implement policies that are linked to capital markets.[34]

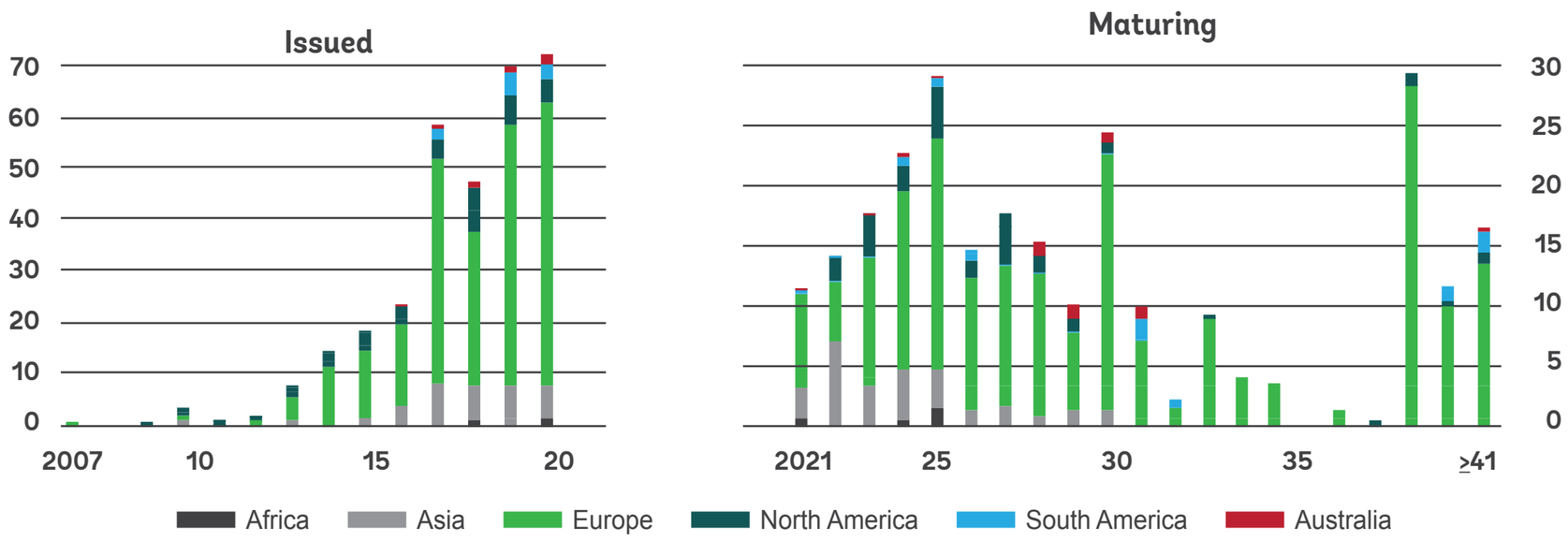
32. Currency risk arises from the change of one currency relative to another currency, which may lead to unpredictable changes in the bond's value.
33. See IFC Guidance for sovereign green bond issuers. (lets please link Riding the Wave, which is an FCI report which outlines our sovereign bond framework and can link to our own TA services)
34. See World Bank Guidance for navigating the ESG landscape for sovereign debt managers.

Figure 8. Cumulative emerging market green bond issuance, 2012 – 2020



Source: IFC, 2020

Figure 9. Volumes of green bonds issued and maturing: Governments and supranationals



Source: NGFS, 2021

CHECKLIST

PHASE 1 - PLANNING

- Define objectives of issuing the green sovereign bond
- Identify how a potential green sovereign issuance could fit within the government's broader government debt strategy and market development goals
- Identify the relevant stakeholders across ministries and set up a coordination mechanism (e.g. steering committee)
- Appoint a central coordinator responsible for oversight and process (depending on the mandate, sovereign debt managers typically within the Ministry of Finance may be most suitable)
- Plan outreach to investors, and engage with other external stakeholders where relevant (stock exchanges, regulators, banks)
- Consider knowledge/capacity gaps and drawing on external expertise (e.g. World Bank support) to facilitate the process

PHASE 2 - IMPLEMENTATION

- Develop a green bond framework, aligned with internationally recognized principles to determine eligible sectors and types of expenditure and to establish monitoring/reporting practice.
- Get internal approval for the green bond framework
- Get relevant ministries to identify potentially eligible green assets from their budgets
- Appoint an external reviewer and arrange an external review
- Prepare the green bond prospectus
- Plan roadshows and other marketing activities to promote issuance
- Issue the green sovereign bond
- Invest in the selected projects or allocate funds to the appropriate government budgets

PHASE 3 - MONITORING & EVALUATION

- Monitor to ensure proceeds are being used for the appropriate projects (e.g. eligibility report)
- Report in line with the predetermined framework
- Evaluate the issuance process
- Issue an annual allocation and impact report (which measures project performance and discloses the expected environmental impact of the projects/activities)
- Prepare next round of green bond issuance and start identifying projects

SELECTED EXAMPLES

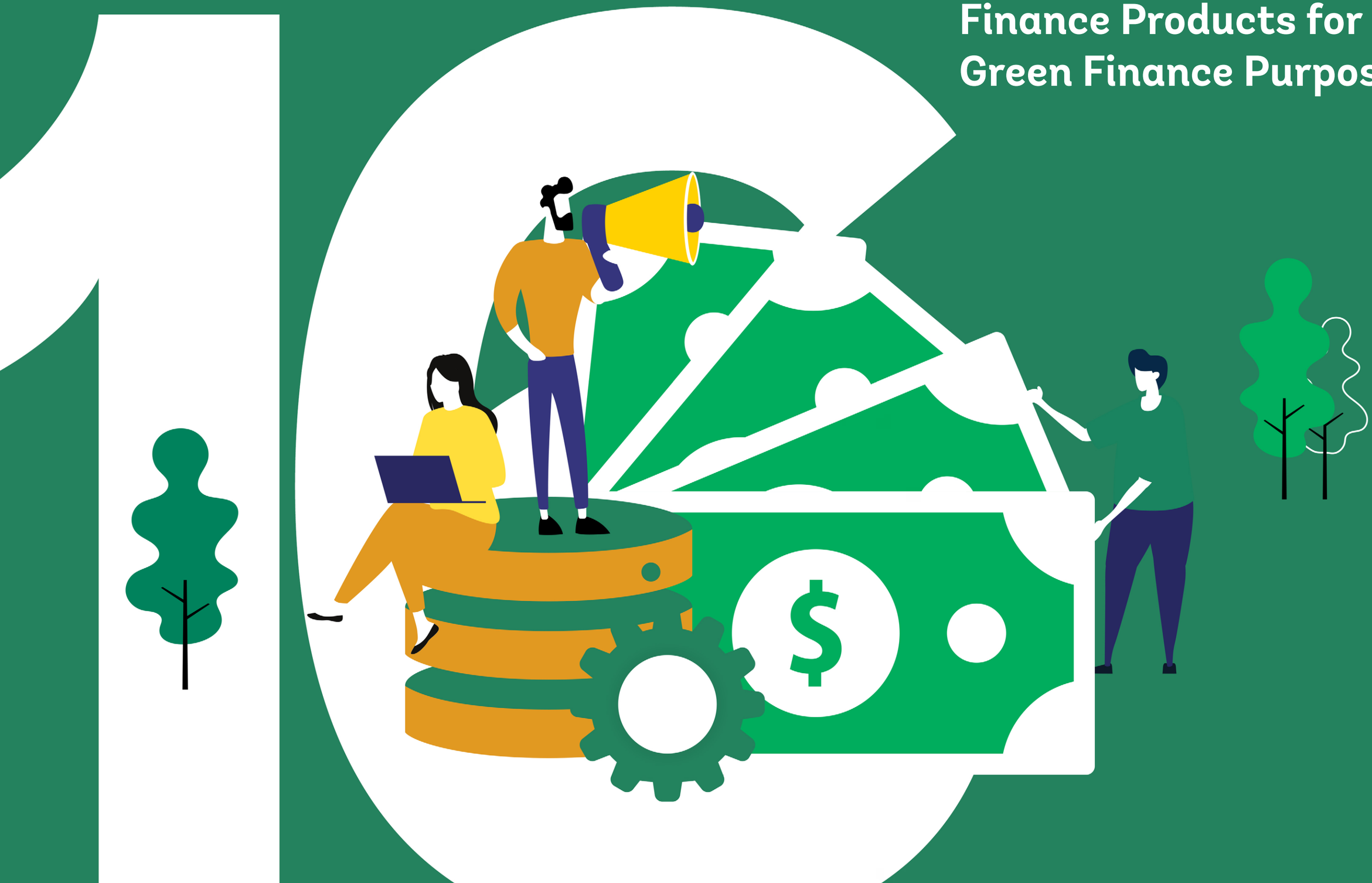
COUNTRY	ISSUANCE
Chile	Several successful issuances in multiple currencies Chile sells sovereign sustainability bond
Egypt	Egypt issued the first sovereign green bond in the MENA region
Germany	Issuance of twin bonds to provide a direct comparison of the "greenium" (i.e. higher price and lower yield) allocated to the green bond (Climate Bonds Initiative)
Malaysia	Malaysia sells first sustainability sukuk for eligible green and social projects
Nigeria	Nigeria's second sovereign green bond issuance was highly oversubscribed, doubling the number of subscribers of the first issuance
France	One of the main issuers, both in terms of size and number of issuance
Fiji	Fiji has issued multiple green bonds to finance its climate goals
Indonesia (green sukuk)	First country to issue green sovereign sukuk
Victoria, Australia	Victoria issued the first certified sub-sovereign green bond

RESOURCES

- Climate Bonds Initiative (2017) Sovereign Green Bonds briefing
- ICMA (2018) Green Bond Principles
- ICMA (2018) Sustainability Bond Guidelines
- ICMA (2020) Sustainability-Linked Bond Principles
- ICMA (2020) Social Bond Principles
- IFC (2018) Guidance for Sovereign Green Bond issuers
- World Bank (2018) Green Bond Proceeds Management & Reporting
- World Bank (2020) Riding the Wave: Navigating the ESG Landscape for Sovereign Debt Managers
- World Bank (2021) My Word is My Bond: linking sovereign debt with national sustainability commitments

TOOLKIT

Promote Use and Development of Blended Finance Products for Green Finance Purposes



GOAL

Unlocking private sector capital for green finance by blending public finance with private investment to reduce risks and/or increase returns of green investments.

DEFINITION

Blended finance is the strategic use of public finance for the mobilization of private capital flows towards emerging and frontier markets.

KEY STAKEHOLDERS

Ministry of Finance, Ministry of Development, Ministry of Environment, National Development Banks and other public finance institutions

RATIONALE

Given the limited availability of public/concessional finance, blended finance mechanisms can help a country bridge the financing gap for its green finance objectives. In situations where private investments are not commercially viable due to high risks or noncommercial returns, suitable financial structuring through blended finance can unlock private investment. Blended finance aims to attract commercial capital toward projects that benefit society while providing financial returns to investors. Blended finance can help mitigate (perceived or actual) risks or uncertainties associated with new, unproven technologies or first-of-their-kind projects by shifting the investment risk-return profile with flexible capital and favorable terms. It helps address specific investment risks and rebalance risk-reward profiles of pioneering impact investments so that they have the potential to become commercially viable over time.

IMPLEMENTATION CONSIDERATIONS

It should be noted that the concept of blended finance is very broad. This toolkit provides some key considerations, but is not exhaustive in terms of the options that blended finance can offer. A key consideration is to assess what entity provides the blended finance. Although this toolkit does not go into the specifics of the design of blended finance instruments, it is important to note that authorities involved in the blended finance instrument should consider the exact governance of the expected transaction. The governance framework will be important in determining how money will flow and which entity or jurisdiction will be responsible for managing the financing arrangements. Many of the blended finance tools described in this section could be offered by green finance entities, such as National Development Banks or other public finance entities. Blended finance should be leveraged by public authorities to overcome barriers to market formation and be withdrawn once functioning markets have been established. Blended finance should not become a static or permanent approach in a given context. As with other actions, it is key to use blended finance alongside efforts to promote a sound enabling environment.

Blended finance transactions can include the use of financial instruments (both at concessional terms and market rates) to crowd in commercial investments, as well as mechanisms to structure or intermediate the use of these instruments. The most commonly used financial instruments in blended finance are: guarantees (which provide protection from various forms of risks of capital loss for investors); debt (typically in the form of subordinated, concessional debt, or both); and equity (mainly in the form of junior equity accepting higher risks for lower financial returns).

Blended finance needs to ensure additionality, by being deployed only for uses where commercial financing is not currently available or suitable for deployment towards green outcomes, especially if it involves concessional financing. Public finance should be allocated to projects that have the greatest leverage of additional funds from other sources. The scope and impact of this leveraging should go beyond project boundaries to consider impacts across the economy.

It is important for governments to assess which authority or authorities are best placed to engage in the blended finance transactions. In some cases, multiple relevant authorities may be identified because different public sector financing institutions, ministries or government agencies may have overlapping interests to mobilize finance for the same sectors. This may depend on the nature of the transaction (e.g. whether it involves direct grants or other financial tools). If a key objective of the transaction is to achieve a market-equivalent financial return for the public authority, a green bank-like entity (where relevant) may be the correct player (see toolkits 12 and 13). Governments can also connect (or provide support to local financial institutions to connect) with international blended finance facilities, such as those offered by the World Bank or the Global Environmental Facility.

It is also important to consider the interaction of the proposed blended finance instrument with the policy environment. For example, positive and negative implicit or explicit carbon pricing (e.g., carbon tax or fossil fuel subsidies) may serve to amplify or reduce the effects of blended finance. The design of the blended finance instrument should consider different factors, such as what sources of funding are available to a sector/ geography, access modalities, processing time, and structuring options. In general, effectively deploying blended finance requires collaboration between authorities and commercial financiers in order to help identify barriers to raising commercial finance, target suitable investor categories (e.g., commercial banks, international banks, institutional investors), and facilitate structures that effectively mitigate risks that are most likely to impact private participation. Actively building in mechanisms to leverage private capital and establishing indicators to assess the extent to which public capital facilitated private capital can inform the development of new instruments and structures over time.

CHECKLIST

PHASE 1 - PLANNING

- Identify the projects/sectors for which blended finance mechanisms are needed to unlock the private finance needed (note: blended finance for climate action should use the national climate finance strategy (see toolkit 2) where possible)
- Carry out an initial assessment of the key barriers and risks to commercial finance for the blended finance tools to address
- Engage with private financiers to understand risks and reasons preventing their involvement
- Engage with experienced providers of blended finance instruments (e.g., World Bank or other MDBs) to build capacity

PHASE 2 - IMPLEMENTATION

- Define the objectives and expected results of the transaction and ensure agreement between all involved parties
- Conduct an adequate risk assessment to identify the project-related risks
- Decide and design the blended finance tool(s) which will deliver on the objectives
- Draft relevant documents including a term sheet and contract outlining the specifics of the transaction
- Develop an implementation plan including a detailed execution timeline

PHASE 3 - MONITORING & EVALUATION

- Agree on performance and result metrics and design a monitoring and evaluation approach
- Track financial flows, commercial performance and impact, dedicating appropriate resources to monitoring and evaluation
- Ensure public transparency and accountability on blended finance operations through reporting. It would be important to identify all the sources of blended financing that could be tracked (including international and domestic blended financing instruments)
- Develop a strategy to exit the blended/concessional finance arrangements once the market has sufficiently matured
- Assess and improve the scalability of the projects (e.g., through harmonization, standardization, internalization of lessons learned)
- Use experience and lessons learned for additional project pipeline generation, further engagement with potential partners and other initiatives to identify opportunities

Box 7. Examples of key blended finance categories

Guarantees and insurance

Government authorities can offer guarantees to pay an agreed-upon amount of a loan or other financial instrument in the event that the guaranteed party cannot reimburse the claims, or a project otherwise fails. Guarantees are flexible instruments, which can be tailored to different circumstances and types of risk. Providing tailored insurance products needed to hedge specific types of risk can provide further assurance for private investors.

Green credit lines

Public (finance) authorities can provide green credit lines to commercial banks, which can be on-lent to end-borrowers for low-carbon projects. Such credit lines aim to demonstrate the commercial viability of green financing as an attractive business model, thus laying the basis for a self-sustaining market for financing different types of projects, for example, sustainable energy and energy efficiency projects.

Co-lending and credit enhancement

Public authorities can directly co-invest alongside a commercial bank in green projects to improve project economics. This funding can have different structures, terms and longer tenors. Taking a subordinated position or providing first loss capital structures can further mitigate project risks and provide additional incentives for private players to step into the market.

SELECTED EXAMPLES

EXAMPLE	DESCRIPTION
Africa Agriculture and Trade Investment Fund (AATIF)	The AATIF is a public-private debt fund administered by Deutsche Bank and targets sustainable agriculture investment in Africa. The capital structure of the fund is composed of several tranches of different size, risk-return profile and maturity, which receive investment from different public and private stakeholders.
Canada-IFC Blended Cliamte Finance Program	The program provides concessional co-financing alongside IFC to initiatives that increase private sector financing across different climate mitigation and adaptation activities.
The IFC China Utility-Based Energy Efficiency Program (CHUEE)	With the support from the GEF and China's Finance Ministry, the program supports energy efficiency measures in the country. It extends an IFC grant to local banks that then lend to market participants, such as utilities and businesses to implement energy efficiency measures.

RESOURCES

- I4CE (2017) Using credit lines to foster green lending: opportunities and challenges
- KOIS Invest (2018) Financing sustainable land use OECD
- World Economic Forum (2015) How-to Guide for Blended Finance
- OECD (2018) Making blended finance work for the Sustainable Development Goals
- OECD (2018) Blended Finance Principles
- GEF (2019) Advances in Blended Finance: Global Environmental Facility's Solutions to Protect the Global Environment
- UNDP (2011) Blending Climate Finance Through National Climate Funds: A Guidebook for the Design and Establishment of National Funds to Achieve Climate Change Priorities

TOOLKIT

Stimulate Origination of Green Loans or Sustainability-Linked Loan Products

GOAL

Support the growth of products across the green lending market to support climate and environmentally sustainable economic activity, including through sustainability-linked loans.

DEFINITION

Green loans are any type of loan instrument made available exclusively to finance or re-finance (in part or in full) new and/or existing eligible green projects[35]. Sustainability-linked loans are any type of loan instrument and/or contingent facility (such as bonding lines, guarantee lines or letters of credit), which incentivize the borrower's achievement of ambitious, predetermined sustainability performance objectives.[36]

KEY STAKEHOLDERS

Ministry of Finance, National Development Banks and other public finance institutions

RATIONALE

The green loan market provides significant potential to scale up green finance activity. This can be a core aspect of increasing banks' involvement in the green finance market and simultaneously supporting the demand side. The banking sector's green lending activity is often still limited and labels for green lending products are missing. A key category of green loan products are green mortgages; meaning a bank or mortgage lender offers a house buyer preferential

35. Definition based on the Green Loan Principles (GLP). Green projects refer to projects falling within the categories of eligibility set out in the GLP.
36. Definition based on the Sustainability Linked Loan Principles (SLLP).

terms if they can demonstrate that the property meets (or will meet) certain environmental or energy efficiency standards. Other examples of the main categories include loans for energy efficiency improvements, renewable energy, sustainable agriculture practices, climate change adaptation or clean transportation financing.

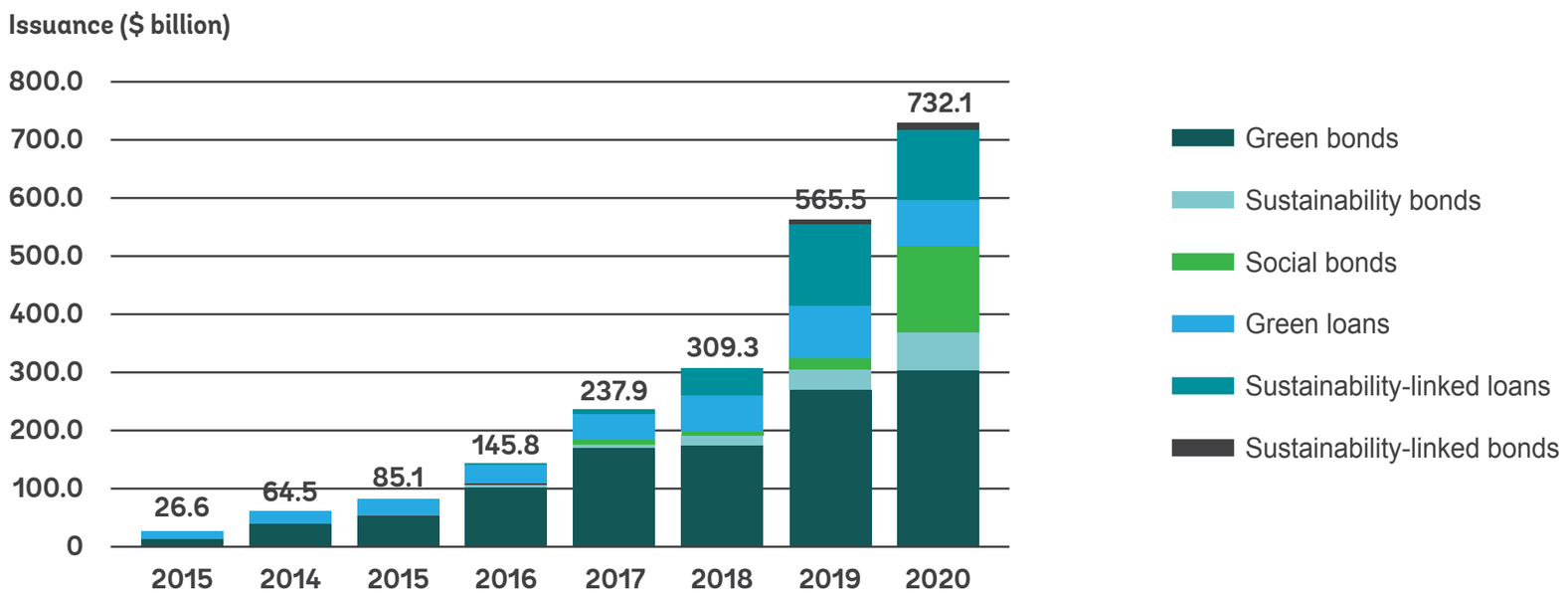
Sustainability-linked loans are a relatively new type of instrument, which has significant potential to become increasingly important for banks, improving their borrower's sustainability profiles over time. Instead of determining specific uses of proceeds such as green loans, sustainability-linked loans look to improve the borrower's sustainability profile by aligning loan terms to the borrower's performance against relevant predetermined targets or Key Performance Indicators (KPIs), providing assurance of the actual benefits achieved by the loan.

IMPLEMENTATION CONSIDERATIONS

A prerequisite for the successful development and integrity of the green or sustainability-linked loan market is the adequate and correct labelling of these products. This provides lenders with the ability to track green lending activity and creates transparency and clarity on the demand side. Alignment with international standards on green or sustainability-linked loans and green taxonomies (see toolkit 11) is strongly advisable to ensure consistency and comparability across jurisdictions, which is important considering the interconnectedness of regional or global financial markets. As with other standards, the appropriateness of a mandatory or voluntary approach may depend on the local context. Standard development would likely fall within the remit of the Ministry of Finance, but could also be (jointly) developed by a financial supervisory/regulatory authority. Tracking or underwriting can also be facilitated by the labelling of assets in the real economy, notably energy efficiency standards for residential or commercial real estate.

Governments have a range of tools and policies at their disposal to build interest and encourage the origination of green or sustainability-linked loan products. Mechanisms such as guarantees, subsidies, government support funds, or support with loan collection, aggregation or data provision can play an important role in facilitating the uptake or the de-risking of these types of products. Governments can draw on international examples (as outlined below in the Resources section) to design and support green lending schemes appropriate to the national context.

Figure 10. Global sustainable debt annual issuance, 2013 – 2020



Source: BNEF, 2021. (note: includes both corporate and sovereign debt issuance)

CHECKLIST

PHASE 1 - PLANNING

- Develop (together with the sector) definitions, standards and principles for green or sustainability-linked loans
- Encourage alignment with international standards (see Loan Market Association Green Loan Principles and Sustainability-Linked Loan Principles) and green taxonomy if available (see toolkit 11)
- Develop a globally consistent labeling and reporting mechanism to identify and track green lending activity

PHASE 2 - IMPLEMENTATION

- Develop standard loan terms or establish common legal, documentation or design standards to simplify the underwriting process
- Facilitate the provision of data (on, for example, energy efficiency) which banks need for their underwriting or loan approval process
- Leverage the public budget to reduce transaction costs or non-payment risks, especially for small lenders or those who are new to the market (e.g., by providing guarantees)
- Create incentive programs for green lending (e.g., tax breaks or guarantees for specific products)[37]
- Leverage national development banks or other public finance institutions to develop the green loan market and increase supply of green loans by establishing a mandate including green or sustainability-linked loan inclusion
- Help banks in collecting green loan repayments (e.g., by developing on-bill repayment programs or repayment programs linked to property taxes, where the property serves as collateral)
- Create awareness and capacity building programs in the financial sector and real economy to enhance familiarity and stimulate the market

PHASE 3 - MONITORING & EVALUATION

- Engage with relevant stakeholders in the financial ecosystem to build support and gather feedback
- Support the development of a standardized review mechanism (e.g., consultant review, verification, certification) to ensure transparency and avoid green washing

37. Note that the appropriateness of these specific types of measures may be highly dependent on local contexts

SELECTED EXAMPLES

CATEGORY	INITIATIVE
Energy efficiency subsidies and loan guarantee schemes	Case study Chile Fondo de Garantía de Eficiencia Energética
Industry and corporate guarantees	Case study China's Utility-Based Energy Efficiency Finance program (CHUEE)
Standardization of lending processes	Case study: Green Climate Fund, Project Preparation Facility.
Data provision	Case study: UK Government National Energy Efficiency Data-Framework (NEED)
Green mortgage and real estate lending	Case study: Green mortgage lending in the Netherlands, and scheme for sustainable housing improvements.
Low risk collection mechanism for energy efficiency measures	Case study: US On-bill Financing and Repayment Programs; and Property Assessed Clean Energy programs.
Project aggregation	Case study Kommuninvest Aggregation of Swedish Local Government Investment Projects

RESOURCES

- Loan Market Association Green Loan Principles
- Loan Market Association Sustainability Linked Loan Principles

WORLD BANK GROUP