




Supporting Climate Compatible Financial Systems Development

Case studies from Mexico, South Africa, Thailand, Uganda
and international recommendations



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LIST OF ABBREVIATIONS

ABM	Asociación de Bancos de México (Mexican Banking Association)
ABSA	Amalgamated Banks of South Africa
ACF	Agricultural Credit Facility
ADB	Asian Development Bank
AFD	Agence Française de Développement
AfDB	African Development Bank
AFOLU	Agriculture, Forestry and Land-use
ASEAN	Association of Southeast Asian Nations
ASISA	Association for Saving and Investment South Africa
ATM	Automated Teller Machine
AUM	Assets Under Management
BAAC	Bank for Agriculture and Agricultural Cooperatives
Bancomext	Banco Nacional de Comercio Exterior (National Exterior Commerce Bank)
BANKSETA	Banking Sector Education and Training Authority
Banobras	Banco Nacional de Obras y Servicios Públicos
BASA	Banking Association South Africa
BAU	Business As Usual
BEIS	Business, Energy and Industrial Strategy
BESA	Bond Exchange of South Africa
BIVA	Bolsa Institucional de Valores (Institutional Stock Exchange)
BANXICO	Bank of Mexico
BMUV	Bundesministerium für Umwelt, Naturschutz, nukleare Sicherheit und Verbraucherschutz (Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection)
BMV	Bolsa Mexicana de Valores (Mexican Stock Exchange)
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (German Federal Ministry for Economic Cooperation and Development)
BoT	Bank of Thailand
BoU	Bank of Uganda
CCFV	Consejo Consultivo de Finanzas Verdes (Green Finance Advisory Councils)
CCUS	Carbon Capture Utilisation and Storage
CDM	Clean Development Mechanism
CDP	Charity formerly known as Carbon Disclosure Project
CEO	Chief Executive Officer
CESF	Consejo de Estabilidad del Sistema Financiero (Financial System Stability Council)
CICC	Comisión Intersecretarial de Cambio Climático (Interministerial Commission of Climate Change)
CIFs	Climate Investment Funds
CMA	Capital Markets Authority
CNBV	Comision Nacional Bancaria y de Valores (National Banking and Securities Commission)
CON SAR	Comisión Nacional del Sistema de Ahorro para el Retiro (National Commission of the Retirement Savings System)
COP	Conference of the Parties
CO2	Carbon dioxide
COVID-19	Coronavirus Disease 2019
CRISA	Code for Responsible Investing in South Africa

CSF	Sustainable Finance Committee
CTF	Clean Technology Fund
DBSA	Development Bank of Southern Africa
DEA	Department of Environmental Affairs
DFFE	Department of Forestry, Fisheries and the Environment
D-SIB	Domestic Systematically Important Bank
EACOP	East African Crude Oil Pipeline
EADB	East African Development Bank
EERF	Energy Efficiency Revolving Fund
EGAT	Electricity Generating Authority of Thailand
EP	Equator Principles
ESG	Environmental, Social, and Governance
ESMS	Environmental and Social Management System
ESRMS	Environmental and Social Risk Management System
ESS	Environmental and Social Safeguards
ETFs	Exchange Traded Funds
EU	European Union
EUR	Euro
EXIM Thailand	Export-Import Bank of Thailand
FAO	Food and Agriculture Organization
FCDO	Foreign, Commonwealth & Development Office
FC4S	Financial Centers for Sustainability
FIRA	Fideicomisos Instituidos en Relación con la Agricultura
FSCA	Financial Sector Conduct Authority
GCF	Green Climate Fund
GDP	Gross Domestic Product
GFANZ	Glasgow Financial Alliance for Net Zero
GGGI	Global Green Growth Institute
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRI	Global Reporting Initiative
HARAS	Social and Environmental Risk Analysis
HKEX	Hong Kong Stock Exchange
ICI	International Climate Initiative
ICMA	International Capital Market Association
IDB	Inter-American Development Bank
IDFC	International Development Finance Club
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IPCC	Intergovernmental Panel on Climate Change
IMF	International Monetary Fund
INDC	Intended Nationally Determined Contribution
ITAM	Instituto Tecnológico Autónomo de México (Autonomous Technical Institute of Mexico)

LIST OF ABBREVIATIONS

JSE	Johannesburg Stock Exchange
KfW	Kreditanstalt für Wiederaufbau
KSIs	Key Strategic Initiatives
LT-LEDS	Long-term low greenhouse gas emission development strategies
MDBs	Multilateral Development Banks
MDIs	Microfinance Deposit-taking Institutions
MFI	Microfinance Institutions
MoF	Ministry of Finance
MoFPED	Ministry of Finance, Planning and Economic Development
MOU	Memorandum of Understanding
MSC	Microfinance Support Centre
MSMEs	Micro, Small and Medium Enterprises
Mt	Megaton
NAFIN	Nacional Financiera
NAPs	National Adaptation Plans
NBFI	Non-Bank Financial Institution
NBI	National Business Initiative
NCCAC	National Climate Change Advisory Committee
NCCRP	National Climate Change Response Policy
NDA	National Designated Authorities
NDC	Nationally Determined Contribution
NFIS	National Financial Inclusion Strategy
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NGO	Non-Governmental Organization
NT	National Treasury
NZAM	Net-Zero Asset Managers Initiative
OECD	Organisation for Economic Co-operation and Development
OIC	Office of Insurance Commission
ONEP	Office of Natural Resources and Environmental Policy and Planning
OTC	Over The Counter
PA	Prudential Authority
PACTT	Prudential Authority Climate Think Tank
PAII	Paris Aligned Investment Initiative
PECC	Programa Especial de Cambio Climático (Special Program on Climate Change)
PRB	Principles for Responsible Banking
PRI	Principles for Responsible Investment
REIPPP	Renewable Energy Independent Power Producer Programme
SACCOs	Savings and Credit Cooperative Organizations
SAFEX	South African Futures Exchange
SAIA	South African Insurance Association
SARB	South African Reserve Bank
SASB	Sustainability Accounting Standards Board
SBFN	Sustainable Banking and Finance Network

SC	Securities Commission
SDGs	Sustainable Development Goals
SEC	Securities and Exchange Commission
SECO	State Secretariat for Economic Affairs
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales (Ministry of Environment)
SET	Stock Exchange of Thailand
SETTHSI	SET Thailand Sustainability Index
SFIs	Specialised Financial Institutions
SHCP	Secretaría de Hacienda y Crédito Público (Ministry of Finance and Public Credit)
SHF	Sociedad Hipotecaria Federal
SIDA	Swedish International Development Cooperation Agency
SIF	Sustainable Insurance Forum
SMEs	Small and Medium Enterprises
SRI	Socially Responsible Investment
SSEI	Sustainable Stock Exchange Initiative
t	Ton
TBA	Thai Banking Association
TCFD	Task Force on Climate-Related Financial Disclosures
TCNN	Thailand Carbon Neutral Network
TGO	Thailand Greenhouse Gas Management Organization
ThaiCI	Thai Climate Initiative
THSSI	Thailand Sustainability Investment
TNAs	Technology Needs Assessments
UBA	Uganda Bankers Association
UCSCU	Uganda Cooperative Savings and Credit Union
UDB	Uganda Development Bank
UGEFA	Uganda Green Enterprise Finance Accelerator
UIBFS	Uganda Institute of Banking and Financial Services
UK	United Kingdom
UMRA	Uganda Microfinance Regulatory Authority
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
USE	Uganda Securities Exchange
UNPRI	United Nations Principles for Responsible Investment
USAID	United States Agency for International Development
USD	United States Dollar
VSLAs	Village Savings and Loan Associations
WG-SF	Working Group on Sustainable Finance
WWF	World Wildlife Fund

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EXECUTIVE SUMMARY

CONTEXT

Climate change has significant impacts on economies, livelihoods and financial systems. Achieving net zero carbon emissions by 2050 is estimated to require global investments in the range of 0.6 to 1% of annual global GDP over the next 20 years. At the same time, according to the CDP (formerly the Carbon Disclosure Project), the financial services industry is expected to be exposed to 80% of the USD 1 trillion in climate change related losses, that the private sector is set to face in the coming five years. In this context, the findings of this study show that there is **a growing sense of urgency among actors in the financial system to address climate change**. Key drivers for this are a mix of high-level policy signals at the national and international level, the emergence of new international reporting standards and requirements, as well as an increased awareness of climate risks and opportunities.

Climate compatible development requires a deep economic transformation, which would demand the reallocation of finance on a large scale. Developing a climate compatible financial system entails actions by public and private financial market actors along the following two categories:

- **Managing climate-related risk**, including the economic consequences of physical climate impacts, as well as transition risks, legal risks, liability risks and

reputational risks related to GHG emissions, climate change impacts and climate change mitigation efforts.

- **Allocating funds** towards financing opportunities related to climate compatible development, inter-alia by favouring investments with low-carbon footprints and offering new financial products, and away from non-climate compatible activities.

This report offers insights on **how financial systems can better align with the new low-emission and climate-resilient development paradigm**. The analysis is based on four case studies, namely **Mexico, South Africa, Thailand, and Uganda**. It aims to identify tangible actions that can accelerate climate compatible financial system development in the four countries and that are potentially applicable to other countries as well. It targets practitioners in developing countries that are interested in advancing climate compatible financial system development within the mandate of their institutions as well as organisations that provide technical assistance to actors of the financial system.

Transforming financial systems towards net zero is a global challenge that requires international cooperation on a major scale. Instruments such as mandatory disclosure standards, issuance of green bonds and reporting against

green taxonomies require skills not yet readily available with many actors of the financial system. International co-operation can play an important role in strengthening local institutions and human capacities to provide the services and expertise required to manage and implement this transition. Moreover, international networks of financial sector actors have provided avenues for knowledge sharing and cooperation. Prominent examples include the Task Force on Climate-Related Financial Disclosures (TCFD), the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), the Sustainable Banking and Finance Network (SBFN), the Sustainable Stock Exchange Initiative (SSEI) and, more recently, the Glasgow Financial Alliance for Net Zero (GFANZ).

KEY FINDINGS: STAKEHOLDERS, MARKET SEGMENTS AND COUNTRY CASE STUDIES

The financial system plays a vital role in allocating resources and sustaining economic activities. Performing this function requires a **tightly interwoven network of markets, institutions, and regulators interacting in a complex manner**. This study focusses on the role of governments and public institutions, the banking market and the capital market in the transformation towards a climate compatible financial system.

Governments have a key role to support and accelerate the shift of financial flows. They can do so by recalibrating existing financial regulation, applying information-based policy instruments such as green taxonomies as well as market support instruments that can help to mature and mainstream nascent climate compatible financial products and innovation. Governments also play an important role in supporting a just transition for sectors and regions that are highly dependent on high-carbon economic activities.

Most developing countries and emerging economies tend to have a **bank-dominated financial system**, while capital markets are still developing. In bank-dominated systems, interventions focussing on regulatory and institutional reform might bring the most impact. In countries with systems dominated by capital markets, engaging the various market actors around common standards and requirements may be more important.

The **case studies cover countries with different levels of economic and financial system development as well as ambition and focus of national climate policy**. With Mexico,

South Africa and Thailand, the study includes three middle income countries, and a low-income country, namely Uganda. Uganda's capital market is still under development. Whereas Mexico has a relatively strongly bank-dominated financial system, in Thailand and South Africa, capital markets play a stronger role. Of the four countries, Thailand has the most competitive financial market with low interest rates for lending and savings.

Mexico has been a first mover in taking steps to make its financial system more climate compatible, including being one of the first emerging markets to issue green bonds. South Africa stands out as an early mover in establishing Environmental, social, and governance (ESG) reporting requirements, developing a climate change modelling framework for climate stress testing and for its comprehensive stakeholder involvement processes, e.g., during the development of its green taxonomy. In Thailand climate compatible financial system development is driven by public and private actors alike. Initiatives such as the establishment of a green taxonomy and a framework for climate stress testing are coordinated through an inter-agency Working Group on Sustainable Finance underlining high-level political commitment. In Uganda, climate compatible financial system development is still at the early stages, but there is growing political momentum with key actors increasingly recognising the urgency to act on climate change and the critical role of the financial sector.

KEY FINDINGS: MAIN ACTION AREAS

The following describes key findings of the study along the six action areas of the *GIZ Sustainable Finance Policy Navigator*, which has proven to be a useful diagnostic tool for structuring the baseline assessment of climate-compatibility of financial systems across different countries.

SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

For an effective transformation to a climate compatible financial system, high level political commitment and associated political agenda setting is key. In all case study countries, policy makers in Ministries of Finance and Central Banks are aware of the risks climate change poses to the financial systems. For decisive private sector action on climate change, it is key that financial regulators and sectoral policy makers set clear, unambiguous and long-term policy signals and provide leadership on climate compatible financial systems development.

As geopolitical instability continues to persist and with the increasing frequency and severity of climate impacts, communicating the importance of climate action for socio-economic development, social justice and preservation of livelihoods becomes ever more important. This is demonstrated in Mexico, where a new government has been readjusting its focus from environmental issues to social equity and local development, and in South Africa's approach to a "just transition".

International cooperation may specifically support cross-sectoral and multi-institutional coordination processes among actors in a country's financial sector, e.g., for developing a roadmap for climate compatible financial systems development. It may also facilitate peer-to-peer learning exchanges for public and private actors in different countries.

DATA, STANDARDISATION AND DISCLOSURE

Robust, standardised and sufficient data and qualitative information disclosure on climate-related risks and opportunities are a prerequisite for financial markets to price or value assets consistent with climate compatible development. Systematic disclosure of information by companies on climate-related risks increases transparency. In all four countries, stakeholders, highlighted **a lack of understanding of what constitutes green investments as a key barrier** for accelerating the transition towards a climate compatible financial system. It hinders market-uptake of green financial products and poses a risk for labelling non-compatible activities as "green", often also referred to as greenwashing.

Establishing taxonomies that define what activities can be considered climate compatible is a key instrument to build such shared understanding. **In South Africa, Thailand and Mexico, where taxonomy development is underway, broad stakeholder consultation processes have been a key factor for the acceptance and engagement with the instrument.** To fully harness the potential of the instrument, it will be important, that **reporting on alignment with the taxonomy becomes** mandatory in the future. Mandatory reporting can then also be a basis for regulatory interventions and market support instruments such as minimum portfolio requirements for climate compatible assets. In countries with relatively advanced capital markets, it is recommended to introduce **mandatory ESG reporting requirements** for companies listed at the country's stock exchange, where feasible in line with TCFD recommendations.

International cooperation can provide technical advice and support for the design process of reporting standards and requirements, including for international harmonisation of reporting standards while keeping processes as simple as possible for smaller actors with limited capacities such as Small and medium-sized enterprises (SMEs). It may also support the set-up of reporting infrastructure and data collection processes.

PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

Adjusting regulatory instruments for climate risks appears to be a policy option that is currently not widely utilised by regulatory authorities. The South African Reserve Bank is the first of the case study countries to publish a climate change modelling framework for financial stress testing. Regulators and supervisory institutions in Mexico and Thailand are also starting to work on **climate stress-tests**. However, none of the regulators in the four case studies apply further prudential instruments such as assigning higher risk weights to high-carbon assets, requiring financial institutions to regulate credit to their customers based on environmental performance and compliance, or adjusting capital requirements for actors that are highly exposed to carbon-intensive investments. Using such potentially highly impactful policy instruments will be important to further drive the transition towards climate compatible financial systems.

International cooperation may support regulatory authorities with specific technical analysis such as the development and implementation of scenario analyses and climate-stress tests, by drawing on international best-practices and facilitating international exchange of experiences. It may also support regulatory authorities to strengthen their in-house capacities to monitor and manage climate-related risks, and support feasibility studies and impact assessments to integrate climate-related risks into regulatory instruments.

MARKET SUPPORT INSTRUMENTS

The four case study countries have been using a wide variety of market support instruments that promote a climate compatible transformation of the financial sector. Such measures include supporting the issuance of green bonds, green credit lines, investment programs, subsidies and de-risking tools such as risk guarantees and insurance instruments. The research has not identified any examples of the use of instruments that explicitly discourage non-climate compatible investments.

The transformation of the financial sector towards climate-compatibility will require a combination of different types of market support instruments, including instruments that promote green investment in specific sectors, instruments that discourage non-green investments and cross-sectoral interventions such as carbon pricing or use of monetary policy tools. The applicability and effectiveness of market support instruments is strongly dependent on country-specific circumstances, including on the level of development of the financial system.

International cooperation may channel international climate finance and technical support towards existing and new financial instruments, including supporting the development and scale-up of innovative solutions (e.g., based on mobile banking systems). It may also support governments, regulatory authorities and potential issuers to facilitate green bond issuance and provide technical backstopping for financial products that link domestic mitigation measures with offsetting instruments, and national and international carbon markets.

LEADING BY EXAMPLE

Apart from recalibrating regulatory instruments and policies, public actors can also support climate compatible financial system development through spearheading efforts in their own institutions. The analysis of the case studies has identified **examples where public institutions have been first movers in making their investment strategies climate compatible, thus setting an example for the broader financial market**. Examples include the Bank of Mexico considering ESG criteria in its own investment decisions, and the first issuance of a green bond in Mexico by a national development bank as well as of the first sustainable sovereign bond linked to the Sustainable Development Goals (SDGs) globally. At the same time, public institutions are still building up in-house capacities to engage with international standards such as the TCFD.

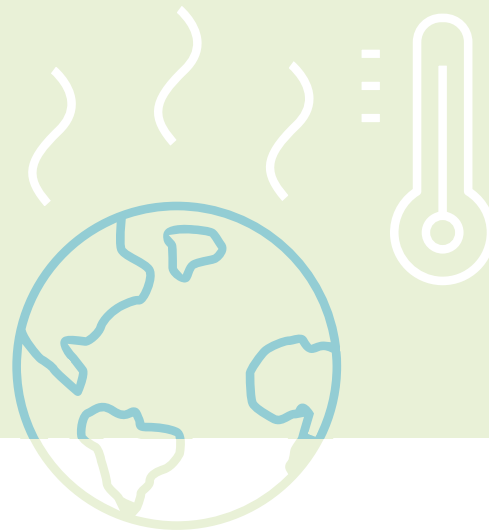
CAPACITY DEVELOPMENT

In all four countries building capacities among financial sector actors on climate compatible finance is a key priority for public and private institutions alike. In-depth knowledge and expertise on climate-related aspects are often still scarce and actors highlight the **need to train more financial sector professionals on key concepts such as climate risks, ESG reporting and climate data and risk analysis**. Lack of national capacities can become a barrier for introducing new financial products as companies have to rely on ex-

ternal expertise that is often only available through international consulting firms. Regulators can support capacity building by integrating an understanding of climate or sustainability risk into licensing requirements for professionals working in the financial sector.

International cooperation can support capacity development efforts including through capacity needs assessments that help identify the country-specific capacity needs of key actors in the financial sector, and through supporting existing efforts of regulatory authorities to strengthen national capacities to report on ESG data and to fulfil other reporting requirements. Capacity development efforts should focus on strengthening national institutions, including national higher education and training institutes.

1



INTRODUCTION

1.1 SETTING THE SCENE

In summer 2021, the Intergovernmental Panel on Climate Change (IPCC) issued a ‘code red’ for humanity. It warned that human activities have caused global warming of about 1.1°C above pre-industrial levels.¹ This level of warming has already led to irreversible impacts, as natural and human systems are pushed beyond their ability to adapt.² Even with rapid and sustained reduction in greenhouse gas emissions in the current decade, these impacts are projected to accelerate and intensify at unprecedented speed and with significant costs. They are also expected to have associated impacts on nature, society, the real economy and consequently also for financial systems.

A recent study by the University of Cambridge predicts that an additional USD 100 billion of global costs per year linked to extreme weather events – such as floods, heatwaves and droughts – can be expected by 2040.³ The UN Environment Programme estimates the cost of adapting to climate change in developing countries alone could rise to USD 140 to USD 300 billion annually by 2030, and between USD 280 and USD 500 billion per year by 2050.⁴ According to the CDP (formerly the Carbon Disclosure Project), the financial services industry is expected to be exposed to 80% of the USD 1 trillion in climate change related losses, that the private sector is set to face in the coming 5 years. By 2100, the IPCC estimates USD 69 trillion in financial losses from climate impacts.⁵

Under the Paris Agreement, the international community agreed to limit global warming to 1.5°C above pre-industrial levels by 2100. To achieve this target, global greenhouse gas emissions must peak by 2025 at the latest and, at minimum they need to be reduced by 43–45% from 2010 levels by 2030.⁶ Carbon dioxide emissions must reach net zero globally in the early 2050s. Governments and non-state actors alike have been moving ahead and pledged emission reductions. These include reduction targets for 2025 or 2030 as well as commitments to move towards net zero emissions by the 2050s. Yet, these targets remain insufficient.⁷ Global ambition must be urgently increased within this current decade to meet the goal of limiting global warming to 1.5°C.

The latest international climate conference, the 26th meeting of the Conference of the Parties to the UNFCCC (COP 26) in November 2021, however, failed to secure reduction commitments commensurate with the 1.5°C target. While the updated commitments would narrow the gap, global mean temperature is still projected to increase by 2.4°C by 2100, even if all 2030 targets as communicated by countries in their nationally determined contributions (NDCs) would be achieved.⁸ COP 26 did, however, reamplify the resolve of the multilateral community to transition towards a low-emission and cli-

mate-resilient future, inter alia by agreeing for the first time to reduce coal-fired power generation and eliminate subsidies on fossil fuels.⁹

A successful transition to a climate compatible development requires significant economic transformation, which would demand the reallocation of finance on a large scale. It is estimated that achieving net zero carbon emissions by 2050 will require global investments in the range of 0.6 to 1 percent of annual global GDP over the next twenty years, implying a cumulative USD 12 trillion to USD 20 trillion. These investments would need to be shifted from a baseline of carbon-intensive practices toward low-carbon solutions.¹⁰ A study by the International Finance Corporation (IFC) estimates that there are opportunities for climate-smart investments in emerging markets of up to USD 23 trillion until 2030.¹¹

While the current global policy response to the climate crisis is insufficient, the speed with which climate-related policies evolve is accelerating. In the last three years, 49 countries introduced emissions trading schemes, 48 countries released plans for exiting coal-fired power generation and 40 countries announced plans to stop registration of cars using combustion engines in the coming years.¹² This trend is likely to amplify, as the impacts of the adverse effects of global warming will become visible to a larger number of people. This is expected to put pressure on governments to act faster.

Alongside strengthening the collective ambition of countries' emission reduction targets, urgently accelerating the implementation of existing pledges is critical, especially for achieving the 2030 targets. A key barrier for implementation is the current lack of sufficient finance flows into green investments. The IPCC estimates that global annual investment requirements for the period 2020 to 2030 in scenarios that limit warming to 2°C or 1.5°C are a factor of three to six greater than current levels. At the same time, it finds that the financial system holds sufficient capital on a global basis.¹³ This underlines three important points:

- Achieving the 1.5°C temperature limit requires not only incremental investments in mitigation and adaptation projects but an **all-encompassing shift of existing financial flows**.
- The world in principle disposes of **sufficient resources to fund the transition** towards low-emission and climate-resilient development pathways.

- Considering the current misalignment of investments and the magnitude of capital that must be shifted, **mobilising actors of the financial system – who make or influence capital allocation decisions – will be a crucial aspect of accelerating mitigation and adaptation action**.

The Paris Agreement acknowledges the decisive role that a realignment of financial flows plays in achieving the 1.5°C temperature limit. Through Article 2.1c, it establishes the goal of 'making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development' as a stand-alone objective of the agreement,^{14 15 16} thus **asking for a transformation of financial markets**.

While mitigation and adaptation policies will impact asset allocation decisions of financial system actors, the explicit finance target in the Paris Agreement expresses the expectation of its signatories to take collective action to push financial actors to take a proactive role in the needed economic transition. Moving financial flows towards investments that are compatible with the objectives of the Paris Agreement would entail a rapid shift away from activities with high carbon intensity.

Developing a climate compatible financial system that meets the needs of the required economic transition entails actions by public and private financial market actors along the following two categories:

- **Manage climate-related risks:** The adverse effects of climate change and tightening mitigation targets have the potential to destabilise the financial system. Managing these risks effectively will be an important task to enable a successful transition of global finance flows.
- **Allocating funds towards financing opportunities related to climate compatible development,** inter-alia by favouring investments with low-carbon footprints and offering new financial products, and away from non-climate compatible activities. Rapidly bringing down the cost of climate-resilient and low-emission technologies and practices will also require new approaches such as blending of different resources and innovative partnerships between public and private actors.

Both the management of climate-related risks and the proactive use of investment opportunities related to climate compatible development can be undertaken with either the motivation of effectively responding to existing risks and opportunities, or with the explicit aim of shifting the financial system to become climate compatible.

Governments have a key role to support and accelerate the shift of financial flows. They can do so by recalibrating existing financial regulation and applying market support instruments that can help to mature and mainstream nascent climate compatible financial products and innovation, and by supporting a just transition for sectors and regions that are highly dependent on high-carbon economic activities.

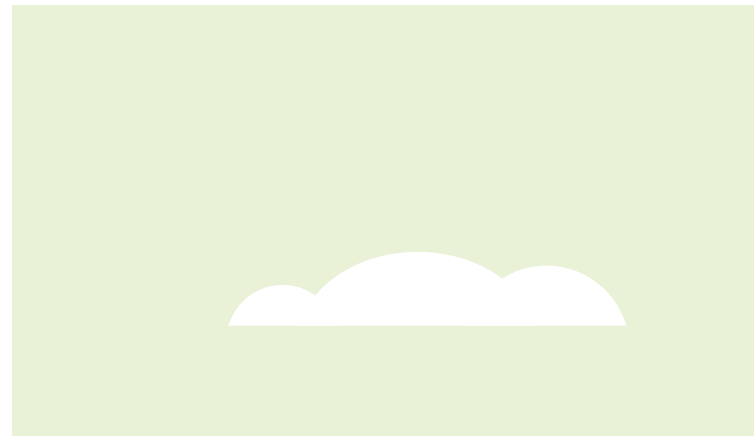
These actions within the financial sector often happen as a direct response to external circumstances, such as growing climate impacts and regulatory pressure from other sectors, including environment and energy. At the same time, financial sector actors can take a proactive role in driving the transformation of the real economy.

1.2 SCOPE AND OBJECTIVES OF THE STUDY

The objective of this study is, based on four country case studies, **to assess how financial systems can better align with the new low-emission and climate-resilient development paradigm. The study aims to identify tangible actions that can accelerate this process in the four countries** and that are potentially applicable to other countries as well. It furthers aims at deriving **concrete recommendations for how enhanced international cooperation can proactively support the required change.**

The study **targets practitioners in developing countries that are interested in advancing climate compatible financial system development within the mandate of their institutions as well as organisations** that provide technical assistance to actors of the financial system. The results may also inform the first Global Stocktake of the implementation of the Paris Agreement that will run from 2021 to 2023 as they provide a systematic assessment of the status quo of climate compatible financial system development.

Four case studies of climate compatible financial system development in Mexico, South Africa, Thailand, and Uganda



form the scope for approaching these objectives. The case studies are embedded in a general analysis of entry points for climate compatible financial system development. The analysis is complemented by information on international initiatives and technical cooperation approaches for supporting climate compatible financial systems development. This will allow contextualising the findings from the country case studies within global trends and derive recommendations that go beyond each country's specific circumstances.

The study provides a systematic overview of how the functions of the financial system must be adapted to support decoupling economic activity from greenhouse gas emissions and strengthening resilience against the adverse effects of climate change. The study uses a functional perspective as its methodological approach. The main feature of this approach is that it looks at financial system development from the perspective of financial functions. Financial functions (such as lending and investing) vary less between countries compared to the institutional set-ups that provide and govern these functions. A functional perspective thus provides a more useful framework for comparing climate compatible financial systems development in different jurisdictions. Institutions do play an important role, however, in driving change. The actions that they can take to make financial functions climate compatible will be analysed within the specific context and circumstances of a country and more generally in chapter 2.2.

The study is based on desk research and on stakeholder interviews in the four case study countries. (See the annex for a list of stakeholder interviews.) **The GIZ Sustainable Finance Policy Navigator¹⁷ provides a useful framework for structuring the assessment of the climate-compatibility of financial systems across different countries.** The navigator is conceptualised as a diagnostic tool to help countries to navigate the financial sectors transition to low-carbon,

resource-efficient, and socially inclusive economies. It clusters policy actions into six main categories or action areas:

- Setting the political agenda and raising awareness
- Data standardisation and disclosure
- Prudential requirements and risk management
- Market support instruments
- Leading by example
- Capacity building

The study uses the above action areas to cluster the assessment of the status quo of climate compatible financial system development both on a global level as well as in the country case studies.

While the transition towards a low-emission and climate-resilient development paradigm is inextricably linked with the wider transition captured in the 2030 Agenda for Sustainable Development, **this study focusses on climate compatible development of the financial system.**

The term *climate compatible financial system development* will be used consistently throughout the study to illustrate its scope and boundaries. The term can be best defined as **the process of recalibrating the functions and processes of the financial system in such a way that it supports and proactively manages climate change related risks and drives the transition towards low-emission and climate-resilient development.**



2



FINANCIAL SYSTEMS SEEN THROUGH A CLIMATE LENS – NATIONAL DEVELOPMENTS AND GLOBAL TRENDS

2.1 THE CLIMATE PERSPECTIVE ON FINANCIAL SYSTEM DEVELOPMENT

The financial system plays an important role in every modern economy. It is characterised by key actors and elements such as financial intermediaries, financial markets and the way they interact with households, governments and companies. Having a well-functioning financial system in place that directs funds to their most productive use is a crucial prerequisite for economic development.

The five main functions of financial systems can be summarised as follows:¹⁸

- Produce information ex ante about possible investments and allocate capital
- Monitor investments and exert corporate governance after providing finance
- Facilitate the trading, diversification, and management of risk
- Mobilise and pool savings
- Ease the exchange of goods and services

Financial system development has been originally defined as **making improvements in how financial actors provide these functions**.¹⁹ While all financial systems provide the same five functions, there are significant differences in *how*

financial systems provide them, depending on the specific country context.²⁰ This underlines the need to approach financial system development through an individual country perspective.

Across the board, climate change is an important factor for financial system development as it impacts the provision of each of the five functions alike, as shown in Table 1.

Within the five functions, there are two key drivers that spur actions aimed at making financial systems climate compatible, namely **reducing the risk exposure of investors (actions within functions 1-3) and making use of the opportunities associated with a climate compatible transformation of many sectors of the economy (actions within functions 4 and 5)**.

CLIMATE CHANGE AS A RISK FOR THE FINANCIAL SYSTEM

In its 2022 Global Risk Report, the World Economic Forum lists the biggest risks to global economies. Similar to recent years, environmental risks constitute the top three, most severe risks on a global scale over the next 10 years, with climate action failure topping the list.²¹ **Climate-re-**

lated risks permeate all areas of the economy, including the financial market and households. Even though climate change is already a reality, measuring and assessing climate-related risks and economic cost of climate change is still work in progress.

Through their functions, products and services, financial intermediaries and investors are closely interwoven with actors and processes of the real economy and their economic business activities along the supply chain. This also implies

that all risks from the real economy arising from climate change, climate change adaptation and the transformation towards a climate-friendly economy pose a risk for the financial sector. Climate change in many sectors also poses a risk for assets to become stranded (see Figure 1).

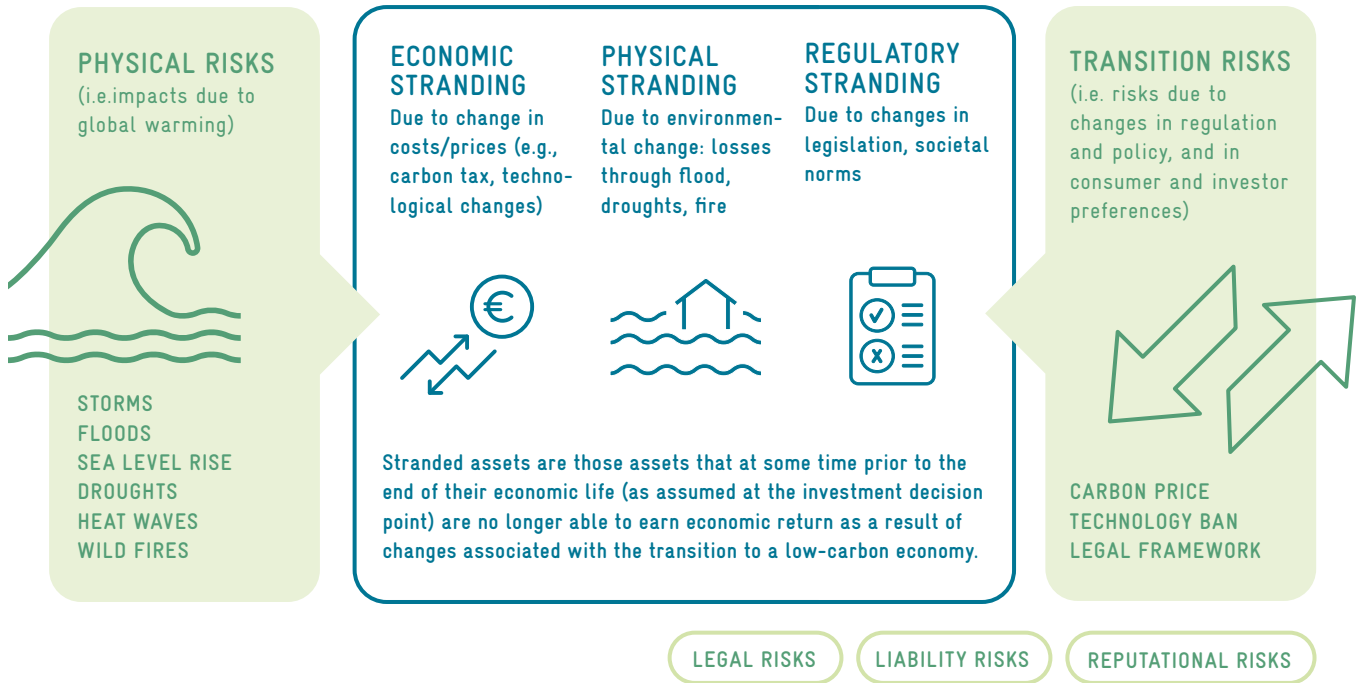
The consideration of climate-related risks will be crucial for the financial sector. Figures 1 and 2 show the interplay between physical climate risks, economic impacts, transition risks, and financial stability risks.

TABLE 1: Functions of the financial system seen through a climate lens

FUNCTION	CLIMATE DIMENSION
1 Produce information ex ante about possible investments and allocate capital	New information such as on climate-related risks and exposure risks to stranded assets form important inputs for investments decisions
2 Monitor investments and exert corporate governance after providing finance	Monitoring approaches must include climate change related indicators such as impacts from adverse effects of climate change and concentration risks of high-carbon investments.
3 Facilitate the trading, diversification, and management of risk	Climate change brings new classes of risks that require different risk management approaches and techniques.
4 Mobilise and pool savings	A rapid expansion of capital-intensive infrastructure investments, for example in renewable energies and infrastructure for climate adaptation / disaster management requires new approaches to mobilise and pool savings.
5 Ease the exchange of goods and services	In an economy that has integrated climate risks and is based on low-carbon technologies, such as renewable energy, and a circular economy, goods and services will be different from those exchanged today. Moreover, the costs of different goods and services may change substantially.

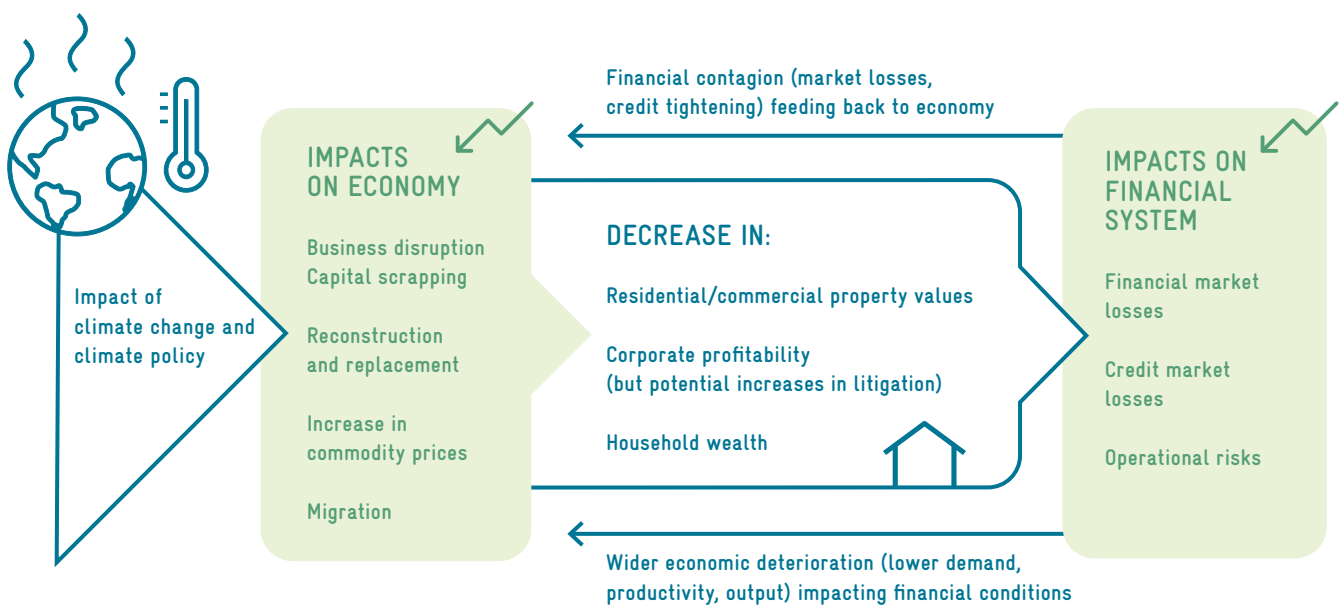
Source: Own compilation using the structure developed by Levine (2004).

FIGURE 1: Climate-related risk drivers and stranded assets



Source of stranded assets definition: Carbon Tracker (2017)²²

FIGURE 2: From physical and transition risks to financial stability risks



Source: NGFS 2021.²³

CLIMATE COMPATIBLE DEVELOPMENT AS AN OPPORTUNITY FOR FINANCIAL ACTORS

As discussed in the first chapter, the transition towards climate compatible economies requires an all-encompassing shift of existing financial flows and an allocation of funds towards low-carbon, climate-resilient investments. Globally, yearly climate-related financial flows have to grow by a factor between 3 to 6 to meet the annual investments needs until 2030.²⁴ This implies opportunities for financial actors, for example related to infrastructure investments requiring long-term capital, to venture capital investments into technology innovation and related to the development and marketing of new financial products that meet the risk-return requirements of climate compatible investments. Capital needs will be significant in all sectors of the economy with particularly large opportunities inter alia in renewable energy, climate-resilient infrastructure, energy efficiency improvements in industry and buildings, low-carbon transport solutions and climate compatible agricultural value chains.

As climate compatible finance becomes the new normal over time, early movers among financial actors may enjoy a competitive advantage over their peers in the long-term. Initial evidence for this is already emerging, including better financing terms in form of lower weighted average cost of capital, creation of higher shareholder value, cost savings and ability to attract better talent.²⁵ Research on the effectiveness of the Chinese Green Credit Policy for example suggests that banks with higher shares of green loans in their portfolios enjoy a lower non-performing loan ratio than their competitors.^{26 27} Similar correlations have been identified in a study analysing banks' performance in Bangladesh.²⁸ Portfolios investing according to environmental, social and governance (ESG) criteria (see Box 1 for a definition of ESG investing) in China have further outperformed non-ESG-focussed portfolios during the COVID-19 pandemic, indicating a higher resilience of such investments during times of crisis.²⁹

Embracing climate compatible finance can also be a strategy for financial actors to distinguish themselves in markets with high competition, including with retail clients, as stewardship for the climate becomes an increasingly important aspect for consumers. Research from Pakistan has shown that banks engaged in green initiatives achieved a higher level of consumer loyalty.³⁰

Research on the impact of fossil fuel divestment on portfolio performance has further shown that divestment does not negatively affect portfolio performance because stocks of fossil fuel companies do not outperform stocks on a risk-adjusted basis.³¹ Excluding e.g.; the firms with the highest carbon intensity which represent one percent of the portfolio of the Swiss National Bank and reinvesting it in companies with the lowest intensity in the same sector would reduce the total financed carbon emissions by 22% without negatively impacting the portfolios' financial performance.³² At the same time active ownership, including engagement with corporate management, filing of shareholder resolutions and use of voting rights, is a viable alternative to divestment strategies. It can be an effective tool to reduce environmental and social risks, maximise returns and have a positive impact on society and the environment.³³

Opportunities for financial innovation exist among other areas in de-risking investments as well as developing robust green labelling and disclosure schemes. In some developing countries, where the issuance of products such as green bonds has been limited, technical cooperation can support the uptake of these instruments.

Presently, capital is not yet fully embracing the new opportunities that come with climate compatible development. One reason for this is that financial markets tend to focus on short-term profits instead of long-term value creation. The following sections of this study will investigate how this trend can be reversed and who the key actors and market segments are for driving change.

BOX 1: Defining sustainable and climate compatible finance

Socially responsible investing (SRI), namely the use of social, ethical and/or environmental criteria to inform investment decisions, dates back many centuries. Originally it has been applied for religious or value-based reasons, which, as of today, continues to be a major motivation for socially responsible investing. Examples include the use of shariah compliant finance based on the Quran, and the exclusion of investments into companies active in slavery, alcohol, tobacco and other “sinful” pursuits by Quakers and Methodists from the 17th and 18th century onward.

More recently, socially responsible investing or ESG investing, which incorporates environmental, social and governance factors (see Figure 3) has gained great popularity with capital markets, especially for mutual funds and stock market indices. In addition to value-based motivations, ESG considerations are also applied in the context of the fiduciary duty of asset managers. This assumes that applying certain ESG factors in investment decisions and practicing active ownership through the use of voting rights has material impacts on fund performance.

FIGURE 3: Defining ESG investing



Environmental considerations might include: climate change mitigation, adjustment to climate change, adaptation, as well as for instance the preservation of biodiversity, reduction in wider sense of environmental pollution, sustainable use and protection of water and maritime resources, the transition to a circular economy.



Social considerations might include: Access to appropriate health care and prevention, compliance with recognised labour standards and employment safety and health protection, fair working conditions, diversity, training and development opportunities, investment in human capital and communities, as well as human rights issues.



Governance consideration might include public and private institutions: management structures, employee relations, tax honesty, anti-corruption measures, sustainability management by the board, board remuneration based on sustainability criteria, employee rights guarantees, data protection guarantees, information disclosure.

For the use in mutual funds, since the early 2000s, SRI investment strategies have followed one or several of the following approaches:

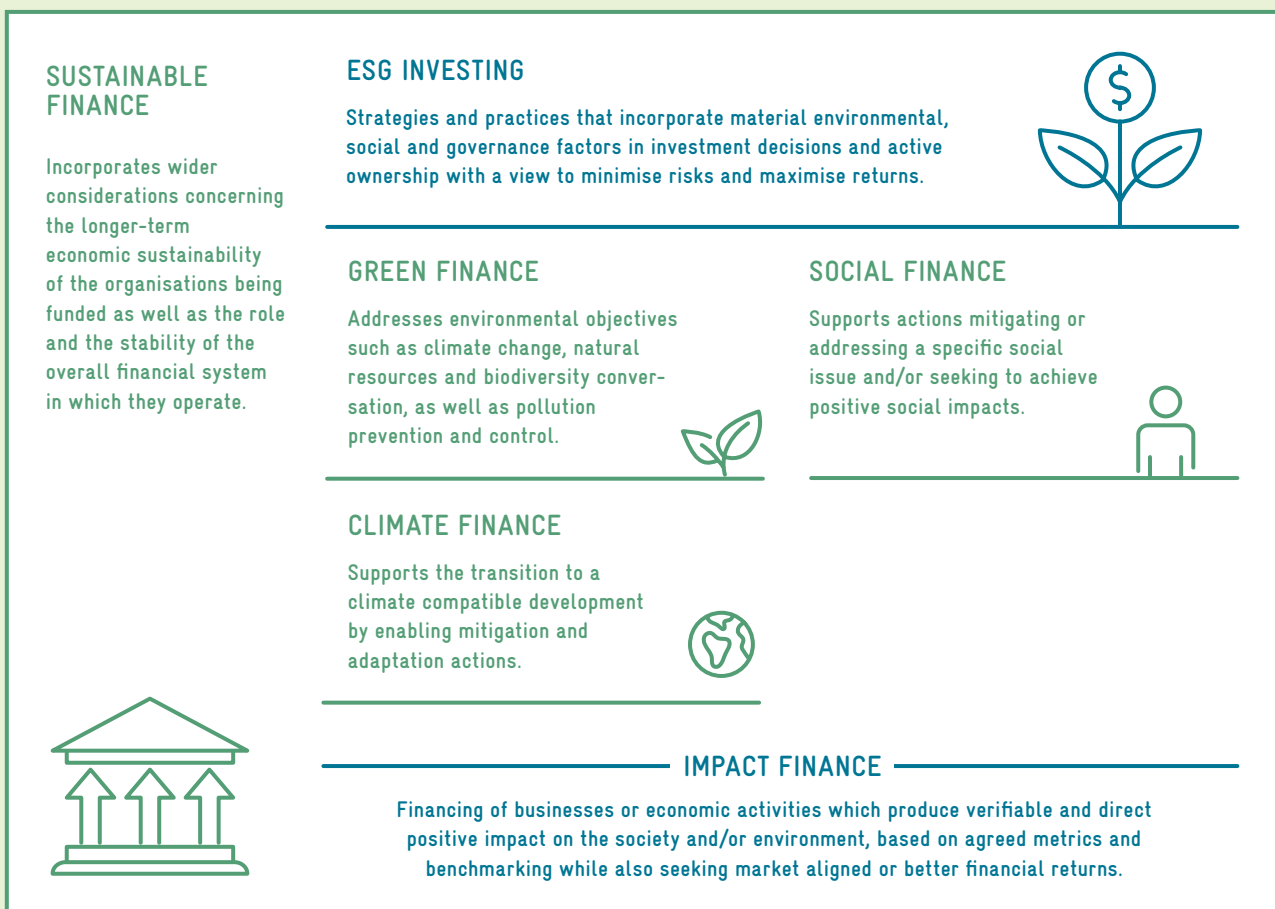
- ESG-Integration,
- Negative/exclusionary screening,
- Positive/Best-in-Class screening,
- Norms-based screening,
- Sustainability themed investing,
- Corporate engagement and shareholder action.

Figure 4 demonstrates how climate compatible finance fits within the broader context of sustainable finance and ESG investing. As can be seen in the graphical representation, climate considerations are only one aspect within the broader framework of sustainable fi-

nance and ESG investing. If climate considerations are to be effectively used as part of broader sustainable investment strategies, it is important to ensure that climate-compatibility does not fall victim to trade-offs with other aspects of sustainable finance.

Generally speaking, sustainable finance is broader than ESG investing. Whereas the latter aims to improve financial sector resilience through a systematic integration of ESG considerations in investment decisions, sustainable finance also attempts to foster sustainable development by channeling capital into sustainability-aligned investments. Similarly, climate finance can be done from a risk management perspective and/or with the aim to actively support climate compatible development.

Figure 4: Interactions between key high-level definitions in the area of sustainable and climate finance



Based on ICMA (2020)³⁴, using sustainable finance high-level definitions defined by the ICMA on pages 4 and 5. Definitions of climate and social finance have been adapted to fit the specific context of the study.

THE FINANCIAL SYSTEM IN CONTEXT OF CLIMATE-COMPATIBILITY: KEY ACTORS AND MARKET SEGMENTS FOR DRIVING CHANGE

One of the reasons that we speak of the financial system is the recognition that it requires a tightly interwoven network of markets, institutions, and regulators to interact in a complex manner to provide the financial functions that the economy needs to fund its activities. The inherent complexity of the financial system also affects any efforts aimed at making it climate compatible. Many processes and functions that are performed by different actors with partly competing interests and mandates must be adjusted, changed, or newly developed. In this section, we describe the role of public institutions, the banking market and the capital market in the transformation towards a climate compatible financial system.

To keep the study focused, other key market segments of the financial system such as the money, and the insurance market are not covered here in detail. Table 1 provides an overview of the climate-related tasks of the financial system, including of financial intermediaries, markets and investors.

GOVERNMENTS, REGULATORY AND SUPERVISORY AUTHORITIES

Public actors involved in financial markets include governments and government agencies with a responsibility for financial sector regulation and supervision, and economic and financial policy making. This includes setting the rules and incentives that guide corporate and financial decision making. The Central Bank oversees monetary policy and regulates the money market, which affects the refinancing of the banking market. Moreover, public sector agencies actively participate in the financial markets when they raise, spend and invest public funds.

Governments, regulatory and supervisory authorities are responsible for setting/creating an overarching framework of climate-aligned regulation and policy that other market actors are partaking in and contributing to. Governments are responsible for political agenda setting on climate and economic development policy, e.g., through their NDCs (Nationally Determined Contributions), through climate or sustainability strategies and action plans. These can provide the overarching framework for policy instruments such as carbon pricing, market support instruments that incentivise climate compatible investments and information-based policy instruments such as green taxonomies.

Supervising authorities and central banks can integrate climate-compatibility considerations into the regulation of credit, money and capital markets, e.g., through frameworks to integrate and operationalise climate-related risks or more broadly ESG considerations and their impacts on financial market stability. This may include introducing requirements for financial institutions to disclose data on climate-related risk, setting reporting standards, as well as undertaking modelling, scenario analyses and stress testing of climate-related risks at the macroeconomic level and for individual sub-sectors and institutions including incorporating climate risks into prudential regulation e.g., into capital requirements or refinancing rates (see Table 4 on page 32). Chapter 3 will provide additional detail on regulatory, supervisory and other approaches that public actors can take to promote climate compatible financial systems development.

At the international level, the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) was founded in 2017. It is a group of central banks and financial supervisors, who, on a voluntary basis, are willing to share best practices and contribute to the development of environment and climate risk management in the financial sector, and to mobilise and mainstream finance to support the transition towards a sustainable economy.

Drivers for change through governments and regulatory agencies are partly a response to climate risks, as public actors aim to ensure financial stability. Further drivers include pressure from Ministries of Environment and other sectors to address climate change considerations in order to support the implementation of climate and environmental policy, and international agreements such as the Paris Agreement and the SDGs and their local application through NDCs or agreed contributions to the achievement of the SDGs.

BANKING MARKET

Most developing countries and emerging economies tend to have a bank-dominated financial market, while the capital market is still developing.³⁵ In bank-dominated financial systems, “banks play a major role in mobilizing savings, allocating capital, overseeing the investment decisions of corporate managers, and providing risk management vehicles”³⁶. Bank deposits constitute the most important form



of household savings and bank loans are the most important source of external finance of companies. Note that, in many developing countries and for previously unbanked parts of the population, the functions of bank deposits as current and savings accounts are being fulfilled by mobile phone-based deposit accounts and e-wallets. In contrast, in market-based systems, securities markets play a stronger role in fulfilling these functions. Major actors of the banking market include commercial and state-owned banks, non-bank financial institutions such as microfinance institutions, national and international development banks, and banking associations.

Banks and non-bank financial institutions contribute to a climate compatible financial system by systematically integrating climate risks into lending and investment decisions, and by financing climate compatible assets and economic activities through project finance and through their commercial and retail banking business. The latter includes, for example offering green savings products and climate compatible real estate financing. For the integration of climate-compatibility into corporate lending, banks need to assess the climate compatibility of a borrower, e.g., through information on the carbon footprint. Alternatively, climate change criteria could be included in formal credit ratings in the future. Banks may also apply ESG criteria or adopt climate-neutrality targets to guide their own business activities.

In many developing countries, microfinance institutions (MFIs) serve lower-income segments of the population who have little or no access to formal financial services. MFIs may channel investments into climate-resilience

and low-carbon technologies and practices, e.g., by mainstreaming climate-resilience considerations into agricultural lending or by financing solar systems.³⁷

National and international development banks are specialised banks or subsidiaries set up to support economic development. They also play an important role in supporting access to financial services, especially for start-ups and SMEs. Through their ability to provide financing at very competitive terms or offer grant financing and risk guarantees they can incentivise financing for climate compatible infrastructure and economic activity. Typical examples include the provision of project finance for renewable energy and public transport projects, for public infrastructure projects that support climate-change adaptation such as dams and water reservoirs, and the provision of green credit lines and grant financing through commercial banks for energy efficiency.

Banking associations may provide a forum for knowledge exchange and capacity development on climate compatible finance. They can also drive voluntary initiatives of the banking industry such as the development of climate compatible banking guidelines, as has been the case in Thailand and Mexico.

Drivers for change in the banking market include regulatory pressure to address climate risks, internal risk management considerations of financial institutions (addressing physical and transition risks), opportunities for the provision of finance for climate compatible assets, improved access to capital, and – for financial institutions owned by a foreign parent company – pressure from the parent company to harmonise ESG standards internationally.



CAPITAL MARKETS

Capital markets include the stock market and the bond market, bringing together buyers and sellers to trade financial assets. Capital markets are an important building block for economic development as they allow for efficient capital supply from national and international sources to enable economic growth. Major actors include financial intermediaries, for example banks, non-financial institutions, asset managers, pension funds and insurance companies. With respect to climate compatible development, on the supply-side, financial intermediaries may offer climate compatible capital market products, such as green and sustainability-linked bonds and equity funds (including mutual funds, Exchange Traded Funds (ETFs)) that integrate ESG criteria. On the demand side, financial intermediaries act as institutional investors, investing capital of their clients namely retail investors, public institutions, pension funds, foundations or other institutional investors. Other important actors that facilitate the supply and demand of capital are the stock markets themselves and investment advisors.

In industrialised countries and emerging markets, capital markets act as an important catalyst in mobilising and allocating climate compatible financing.³⁸ As a matter of fact, within the euro-zone, amounts and assets under management in green or sustainability-linked capital market instruments far exceed the amounts of green or sustainability-linked bank lending (see Figure 5). In 2020, more than three times the amount of sustainable or green bonds was issued compared to the amount of sustainable or green loans.³⁹

In developing countries and emerging markets, where financial markets tend to be bank-dominated, capital markets may not be well developed.⁴⁰ The African financial sector for example is dominated by commercial banks while most stock exchanges are still at the early stages and the bond market is dominated by public bond issuances.⁴¹ In Latin America equity markets are currently characterised by a decreasing number of listed companies, low liquidity and high market concentrations.⁴² Within the case studies presented here, Thailand and South Africa have relatively well-developed capital markets, while Mexico’s and Uganda’s financial system are bank-dominated.

FIGURE 5: Comparative size of different sustainable finance instruments in the euro area 2015–2021



Based on outstanding amounts for bonds and loans, and assets under management for ESG funds, December 2015 to June 2021. Bubble sizes are approximates based on the figure presented in Chart A in Born et al. (2022).

Selected entry points for capital markets to become more climate compatible include:

- **Increasing transparency about the climate and ESG performance of investee companies and financial assets through disclosure.** Since 2015, out of the 118 stock markets monitored by the Sustainable Stock Exchanges Initiative (SSE)⁴³, the number of markets who have published ESG reporting guidelines for their listed companies has increased from 11 to 64. These include developed countries such as the US and Germany, emerging markets such as China and India as well as developing countries such as Kenya and Botswana. As a matter of fact, China and Thailand have been first movers in issuing guidelines for sustainability reporting.⁴⁴ Moving towards more specific climate-related disclosures, many stock markets are in the process of issuing additional climate-specific disclosure standards or complementing existing ESG standards by aligning them with recommendations by the TCFD⁴⁵. The Hong Kong Stock Exchange (HKEX) has, for example, introduced a requirement to disclose the impacts of significant climate-related risks and opportunities and the actions taken to manage these in the ESG reports of listed companies. HKEX also reviews ESG reports from selected issuers and publishes the review findings to provide insight and guidance to issuers on the possible improvement areas for assessing ESG-related risks.
- **Offering ESG or climate compatible investment products, especially mutual funds and exchange traded funds (ETFs) based on sustainable stock (and bond) market indices:** The sustainable mutual fund sector has recorded large market growth over the last 15 years. Although, total assets under management of sustainable investment funds are still small, they are growing rapidly. According to the International Monetary Fund (IMF), assets under management (AUM) more than doubled over the past four years and reached USD 3.6 trillion in 2020 (out of USD 49 trillion in all the funds sampled for the study)⁴⁶. Sustainable investment funds tend to include climate-compatibility consideration to a certain degree (see Box 1). Specifically, climate-oriented funds accounted for USD 130 billion of the total sustainability-oriented funds.⁴⁷
- **Issuing sustainable, green and climate compatible bonds:** Green bonds, issued either by public or private actors, raise capital for green projects and investments, or for refinancing purposes. Since the first green bond was issued in 2007, the market has grown exponentially. In 2019, almost USD 263 billion were issued in the form of 1'788 green bonds from 496 issuers across 51 jurisdictions. This represents more than 50% growth compared to the previous year.⁴⁸ As COVID-19 hit the world economy in 2020, green bond issuances remained at similar levels at almost USD 270 billion⁴⁹ in parallel to an increased issuance of social bonds addressing funding needs from the pandemic.

Capital market transactions happen on the regulated and unregulated segment of the market. On the regulated capital market, financial transactions take place through a stock exchange or regulated intermediaries; climate compatible regulations take effect here. In the unregulated, Over-the-Counter market, participants trade directly between two parties without a central exchange or third party. It implies additional risk, but also enables more innovative forms of financing that have yet to establish themselves on the regulated market. In Germany, for example, the initial steps of the energy transition were partly financed through closed funds and other products of the grey market, which were often sold to retail investors. The proceeds were used to finance wind farms.

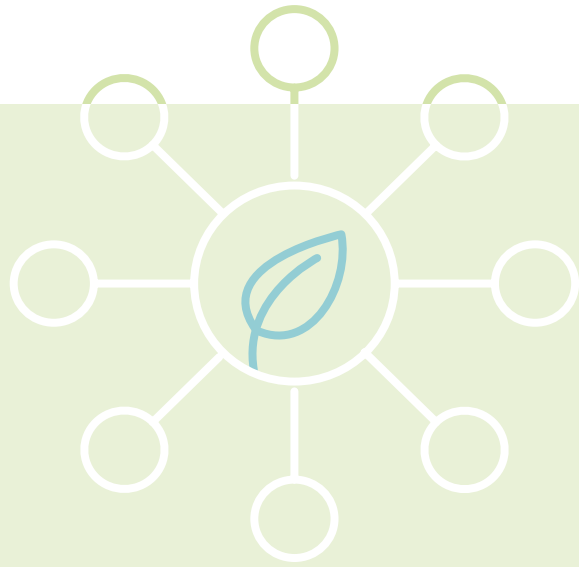
A key driver for making capital markets more climate compatible has been investor demand, especially by institutional investors. Public sector interventions, such as mandatory listing requirements for issuers have played a comparatively smaller role. Due to investor pressure, capital markets so far have been performing better in reallocating investments towards greener activities. Stimulating the development of capital markets in bank-dominated countries has therefore been suggested as a complementary strategy to instruments such as green credit guidelines and carbon disclosure requirements.⁵⁰ At the same time, there are fundamental questions about how well-suited capital markets are to address long-term issues such as climate change. These concerns relate to the current orientation of capital markets towards allocating money based on relatively short time horizons (“short-termism”) and financial risk-return considerations.⁵¹ Moreover, a lot of the activity on capital markets is in the secondary market, which has only a limited direct impact on the issuer / emitter.

Table 2 provides an overview of opportunities for supporting climate compatible financial system development available to key actors of the financial system.

TABLE 2: Overview of opportunities for supporting climate compatible financial system development available to key actors of the financial system

ACTOR	KEY FUNCTIONS	OPPORTUNITIES FOR SUPPORTING CLIMATE-COMPATIBILITY
Governments	Define policy and set legal frameworks	<ul style="list-style-type: none"> → Setting the overarching legal framework for climate policy, incl. clarity on decarbonisation pathways for different sectors → Mainstreaming of climate considerations into financial policy → Developing strategic frameworks for climate compatible financial systems development → Providing incentives for climate compatible investments → Integrating climate considerations into management of public funds → Using information-based policy instruments e.g., mandatory taxonomies, and capacity building
Regulator or supervising authorities & Central Banks	Implement law through setting rules, regulations and standards, and enforce law (Mostly) oversee monetary policy and regulate the money market	<ul style="list-style-type: none"> → Introducing requirements for financial institutions to disclose climate risk related data and information, setting reporting standards, undertaking modelling and scenario analysis of climate-related risks at the macroeconomic level and for individual sub-sectors and institutions, incorporating climate risks into prudential regulation → Incorporating climate risks into investment decision making (for Central Banks)
Banks and non-bank financial institutions	Accepting of deposits and advancing loans, including consumer finance, as well as services such as trading securities and investment banking	<ul style="list-style-type: none"> → Offering climate compatible financial products (for lending, saving, financing) → Integrating climate change considerations in risk-management, the institution's investment strategy and product and service development → Improving climate-compatibility of the own company
State-owned financial institutions	Equivalent to private-owned financial institutions, but often with a specific public mandate interest.	<ul style="list-style-type: none"> → Government owned institutions can act as a role model for a climate compatible financial institution, with their own sustainability and climate compatible inhouse strategy, products and services and disclosure.
Development banks (national, regional and international)	Set up to support specific development objectives, including private sector development, often through provision of subsidised lending, guarantees and grants	<ul style="list-style-type: none"> → Providing funding for climate compatible investments, e.g., through green credit lines, subsidies, funding of green venture capital funds etc. → Mobilising private investments, e.g., through risk guarantees, concessional finance etc. → Mainstreaming climate risks into infrastructure investments → Excluding high-carbon investments, e.g., into fossil fuel production and coal-fired power plants
Institutional investors (including banks, insurance companies, public and corporate pension funds) and asset managers	Invest the funds of third parties and manage wealth.	<ul style="list-style-type: none"> → Investing in climate compatible financial products: e.g., funds, and mandates → Conducting climate risk management → Employing ESG and climate compatible investment strategies → Influencing corporate decision making for climate-compatibility through active ownership (incl. engagement and use of voting rights) → Divesting high-carbon assets and companies
Insurance companies	Assessment of risks and sale of insurance policies to their clients, e.g., life insurance, health insurance, liability insurance, property insurance and re-insurance	<ul style="list-style-type: none"> → Offering insurance products for climate, weather and disaster-related risks → Mainstreaming of climate risks into re-insurance products → Integrating climate considerations into the own investment strategy (see institutional investors)

3



ACTION AREAS AND REGULATORY INSTRUMENTS FOR SUPPORTING CLIMATE COMPATIBLE FINANCIAL SYSTEMS DEVELOPMENT

The following section describes regulatory, supervisory and other approaches that public and to some extent private actors can take to promote climate compatible financial systems development.

3.1 SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

Environment and sectoral ministries such as Ministries of Energy have, for several years now, set comprehensive climate-related or more broadly, sustainability-related policies. Regulatory and supervisory authorities in the financial sector, however, are often only recently beginning to integrate climate considerations in the regulatory framework. Financial sector policy makers, regulators and supervisors such as Ministries of Finance and central banks can play an important role in driving change towards a more climate compatible financial system through the development of strategies, standard settings and policy roadmaps that address the climate-compatibility of the financial system.

Efforts to raise awareness on these topics such as providing avenues for dialogue and engagement support the process of political agenda setting and policy formulation. They

create a common understanding of the specific risks and opportunities climate change poses for the country's financial system and of a tangible way forward.

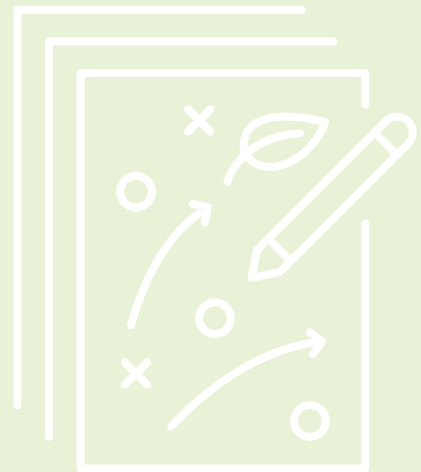
Sustainable finance roadmaps are a tool for countries to structure both the policy development and stakeholder engagement process. A roadmap can facilitate a strategic approach to policy development by using a multi-stakeholder process to identify needs and priorities of a country and assigning responsibilities and timelines for the implementation of priority measures and actions.⁵² Such roadmaps are more effective if they include all actors involved in the financial sector – governments, regulators, supervisors, the private sector, academia, intergovernmental organisations and other relevant institutions. Clear monitoring and implementation steps further enhance their sustainability and likelihood of success.

There are several countries that have developed sustainable finance roadmaps in the past years. These include Indonesia, Malaysia, Morocco and Sri Lanka, among others. Most of them address reporting & disclosure (93% of roadmaps analysed), institutional responsibility, capital supply & allocation, risk management, capacity building, standards, product and market innovation, reg-

ulation, data collection, formal education, research and fiscal incentives (27% of roadmaps analysed). Most roadmaps were drafted with input from stakeholders of the public and private sectors.⁵³ Box 2 provides an example of a sustainable finance roadmap. While they have been successful in engaging different stakeholders on the topic of climate compatible financial system development, it is often not clear to what degree the measures identified in the roadmaps are implemented.

BOX 2: Nigeria's sustainable finance roadmap

The sustainable finance roadmap of Nigeria was developed through a partnership between Nigeria FMDQ OTC Securities Exchange and UN Environment's [Inquiry into the Design of a Sustainable Financial System](#). The process involved the consultation of key actors of the financial system, including government, banking, institutional investors, development banks, Islamic finance as well as professional networks and academia. At its core the roadmap provides an analysis of the sustainable finance opportunities in Nigeria for the period until 2030. It is estimated that there is a need for additional sustainable investments of USD 92 billion annually in areas such as clean energy systems, sustainable cities, agriculture, land use, transport, education and health care. It further found that the majority of sustainable finance flows are from public resources, underlining the need to mobilise the private sector. The roadmap in this context highlights the role of the banking sector, which is identified as the core actor for making finance flows more sustainable. Further action areas identified include the need to develop sustainable finance definitions and taxonomies, and to improve non-financial disclosure.



The roadmap also highlights the potential of developing the green bond market after the country in 2017 had issued Africa's first sovereign green bond. The Nigerian Green Bond Market Development Programme provides technical assistance through Financial System Deeping (FSD) Africa, Climate Bonds and FMDQ.

Source: UN Environment (2018)⁵⁴

3.2 DATA, STANDARDISATION AND DISCLOSURE

Robust, standardised and sufficient data and qualitative information disclosure on climate-related risks and opportunities are a prerequisite for financial markets to price or value assets consistent with climate compatible development. Systematic disclosure of information by companies on climate-related risks makes exposure to such risks more transparent. The digitalisation of financial services supports this trend. Such information is also required by regulators and supervisory authorities to design regulation targeting climate compatible financial systems development.⁵⁴

A key challenge for the effectiveness of risk disclosure has been the lack of a common understanding of what types of activities can be considered sustainable or climate compatible. To close this gap, several countries have started to develop classification systems that establish lists of economic activities that are environmentally and socially sustainable in the form of taxonomies. The ultimate objective of these taxonomies is to redirect financial flows towards sustainable or climate compatible projects. Among such classification initiatives, the “EU taxonomy for sustainable activities”, also commonly referred to as EU green taxonomy, has so far received the most attention (see Box 3 for

details). Developing countries and emerging economies such as Bangladesh, Chile, China, Colombia, Malaysia, Mongolia or Thailand have also either adopted taxonomies for sustainable or green investments or are in the process of developing a taxonomy.⁵⁵ A report by the Climate Bonds Initiative provides a useful overview of the status of green taxonomies worldwide.⁵⁶

The tangible impact of a taxonomy depends strongly on whether it remains a voluntary instrument or whether it is translated into mandatory reporting requirements or into minimum investment requirements, or if it stipulates the use of proceeds in the case of taxonomy-aligned green bonds. Moreover, while taxonomies help to establish a common language and understanding of what climate compatible or sustainable investments are, data availability from reporting corporates remains a substantial challenge. This implies that it remains difficult to understand whether economic activities are in fact aligned with the taxonomy. Moreover, where data is available, it is often collected through different methodologies. This lack of standardised and consistent methodologies results in data not being comparable across sectors, data providers or asset classes. To meet the challenge of data quality, the Sustainable Finance Committee of the German Federal Government recommends the following core reporting requirements:

TABLE 3: Recommended core reporting requirements

FUNCTION	CLIMATE DIMENSION
Produce information ex ante about possible investments and allocate capital	New information such as on climate-related risks and exposure risks to stranded assets form important inputs for investments decisions
Monitor investments and exert corporate governance after providing finance	Monitoring approaches must include climate change related indicators such as impacts from adverse effects of climate change and concentration risks of high-carbon investments.
Facilitate the trading, diversification, and management of risk	Climate change brings new classes of risks that require different risk management approaches and techniques.
Mobilise and pool savings	A rapid expansion of capital-intensive infrastructure investments, for example in renewable energies and infrastructure for climate adaptation / disaster management requires new approaches to mobilise and pool savings.
Ease the exchange of goods and services	In an economy that has integrated climate risks and is based on low-carbon technologies, such as renewable energy, and a circular economy, goods and services will be different from those exchanged today. Moreover, the costs of different goods and services may change substantially.

Source: Sustainable Finance Committee to the German Federal Government (2021), page 20.⁵⁷

Regulators can build further clarity on what activities are climate compatible through defining activities that are associated with high carbon emissions, and by developing associated exclusion criteria. To adequately reflect the present socio-economic reality of sectors and regions that currently depend on high-carbon economic activities, it is important to also define “just transition corridors” for the decarbonisation of these sectors, and to develop alternative sustainable employment and livelihood opportunities for the respective regions.

Exclusion criteria can be an effective instrument for decarbonising portfolios of development banks and private financial institutions. However, their overall environmen-

tal effectiveness depends on the market power of the participating institutions. At the international level, for key public and private actors that fund international infrastructure projects, it is therefore important to achieve international consensus on exclusion criteria, e.g., for funding of new overseas coal-fired power plants. In 2021, China announced to end Chinese funding of new coal-fired power plants abroad.⁵⁸ This commitment complements similar policies by major Organisation for Economic Co-operation and Development (OECD) countries and is thus expected to have a significant impact on slowing down the construction of new coal-fired power plants in developing countries.

BOX 3: The EU taxonomy for sustainable activities

With the objective to direct investments towards sustainable projects and activities for meeting the EU's climate and energy targets, the EU has developed a classification system for sustainable finance, the EU taxonomy for sustainable activities, which was published in 2020.

It defines which economic activities qualify as environmentally sustainable and establishes six environmental objectives, including climate change mitigation and adaptation. The taxonomy prescribes technical screening criteria for 70 economic activities for mitigation and 68 activities for adaptation, aiming to identify those that are compatible with the EU's stated objective of achieving climate neutrality by 2050. The EU taxonomy criteria cover the economic activities of roughly 40% of EU domiciled listed companies, in sectors which are responsible for about 80% of direct greenhouse gas emissions in Europe. The EU taxonomy sets mandatory requirements on disclosure for large financial and non-financial companies that fall under the scope of the Non-Financial Reporting Directive. These companies have to disclose to what extent their activities meet the taxonomy's criteria. Further, financial market participants such as asset managers must disclose to what extent activities funded through their financial products meet the criteria of the taxonomy.

Asset owners and investment managers that have piloted reporting in accordance with the EU taxonomy on a voluntary basis between late 2019 and 2020 have highlighted that the data required may not always be

available or sufficiently granular. They further emphasised that the application of EU standards outside the EU remains challenging, limiting the taxonomy's usability for investments outside the EU. This underlines that the introduction of taxonomies should be accompanied by sufficient guidelines and capacity building with key actors to ensure its effectiveness.

The design of a taxonomy is a complex task as it must translate scientific findings on what is required to limit global warming to 1.5°C into a practical framework that can be used for economic decision making by companies and businesses across many different sectors. As such, the design process also involves the balancing of many different interests. Ensuring that the design-process follows a science-based approach that is open and inclusive with a transparent decision-making process is important to safeguard the credibility and trust in the instrument. The EU taxonomy is a case in point as the decision of the European Commission to include electricity generation from gas and nuclear as sustainable activities has been highly controversial, undermining the taxonomy's science-based approach and jeopardising the success of the instrument. The move has been heavily criticised by environmental groups, scientists, and investor groups alike. Some Member States such as Austria, Germany and Luxembourg have announced that they would oppose the inclusion of gas and nuclear in the European Council vote on the instrument.

Sources: European Commission Website⁵⁹; PRI (2020)⁶⁰

3.3 PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

As discussed in chapter 2, climate change poses significant systemic risks for the financial system, jeopardising its stability. The adverse effects of climate change impact the real economy by destroying physical assets, reducing income opportunities, reducing credit worthiness and shrinking the fiscal base. This in turn impacts the financial system by increasing defaults, destroying collateral, as well as reducing enterprise value and associated portfolio books, reducing the ability to pay and increasing fiscal deficits, amongst others.⁶¹ Managing these risks and thereby reducing their impact on financial system stability is a key task of authorities that share regulatory responsibility over the different elements of the financial system.

Regulatory and supervisory authorities must equally pay attention to risks from the adverse effects of climate change as well as exposure risks originating from institutions with a large number of high-carbon assets.

Actors sharing responsibility for regulation such as central banks can deploy several tools for reducing the impacts of climate-related risks on the financial system. Most of these are adaptations of well-established regulatory instruments that have been in use in other contexts such as scenario analysis, stress testing and capital reserve requirements. Table 4 summarises the most important instruments available to central banks and other regulatory authorities.

TABLE 4: Overview of prudential instruments for climate compatible systems development

INSTRUMENT	DESCRIPTION
Scenario analysis / stress testing	Developing and running different scenarios of climate-change induced shocks to the financial system will support identifying and quantifying the degree of exposure of different financial institutions to climate-related risks. Scenarios could e.g., include an increase and frequency of extreme weather events or a sudden re-pricing of carbon-intensive assets.
Capital buffers	Increasing capital requirements for actors that are highly exposed to carbon-intensive investments can help to cushion the impacts of re-pricing of these assets due to more stringent emission reduction policies. Decreasing capital requirements for low-carbon loans ('Green supporting factor') may contribute to accelerating the transition to a sustainable, climate-neutral economy.
Risk weights	Assigning higher risk weights to high-carbon assets could set incentives for investors to divest from them and therefore reducing their risk exposure.
Exposure restrictions	Setting limits on maximum allowable exposure to high-carbon assets would restrict lending by financial institutions to these activities.
Amending D-SIB criteria	The inclusion of the degree of exposure to high-carbon assets as a criterion for identifying domestic systematically important banks (D-SIBs) could ensure that exposure to climate-related risks is appropriately reflected when identifying D-SIBs.
Differential reserve requirements	In some emerging markets and developing countries, the financial policy framework still contains compulsory reserve requirements for commercial banks. Allowing banks to hold fewer reserves against climate compatible loans could provide an incentive to increase the volume of such loans.

Source: Adapted from Dikau and Ryan Collins (2017).⁶²

In some countries, central banks have been already exploring instruments to mitigate climate-related risks and scale-up green finance for some time (see Box 4 for details).

BOX 4: Green central banking initiatives in Bangladesh

In Bangladesh, one of the most vulnerable countries to climate change, Bangladesh Bank issued Environmental Risk Management Guidelines as well as **Green Banking Policy Guidelines** to banks and financial institutions in 2011. This was complemented by setting a minimum target of five percent of loan disbursements to go to green investments for all banks and financial institutions in 2016. A list of products and initiatives that can be considered as green was issued in 2017 and a uniform reporting format for monitoring progress on a quarterly basis was introduced in 2018. In 2020, Bangladesh Bank introduced a **Sustainable Finance Policy** that complements the green finance policy by capturing additional sectors such as sustainable agriculture. All banks and financial institutions were required to set up sustainable finance units and committees, and a target of allocating at least 20 percent of loan disbursements to sustainable finance was set. The quarterly report also monitors data on banks in-house environmental management such as the number of branches or ATM booths that are powered by solar energy. By 2021 all banks and financial institutions had established sustainable finance units, only few banks were however able to meet the respective targets for green and sustainable finance.



The Green Climate Fund (GCF) currently supports Bangladesh Bank in its effort to strengthen its regulatory capacity to better manage the risks and opportunities of climate change through its readiness and preparatory support programme. With the support of the project, Bangladesh Bank currently develops a framework that provides guidance for Islamic banks to design shariah-compliant green finance products. The Islamic financial industry plays an important role in the country and the framework will complement the existing green banking guidelines adopted in 2011 that did not include guidance for sharia-based products. Next to the framework, the project supports the establishment of a sharia-based “Green Banking Knowledge Hub” as well as knowledge dissemination with other countries that have a sharia-based financial industry such as the Maldives, Pakistan, Malaysia, and Indonesia.

Sources: GCF (2019)⁶³; Bangladesh Bank⁶⁴

3.4 MARKET SUPPORT INSTRUMENTS

Market support instruments promote a climate compatible transformation of the financial sector by addressing common financial barriers for climate compatible investments such as unfavourable risk-return profiles, high financial transaction costs e.g., due to high (actual or perceived) risks, small project sizes, or no track record with new products/technologies and markets and regulatory constraints.

Potential public instruments for creating a conducive enabling environment include financial and technical support for the development of financial products, services, and markets (such as standards for green-themed bonds and loans, own issuances, liquidity provision); investment programs; fixed market shares e.g. green credit quotas, monetary policy instruments; incentives (including tax incentives for green financial products) and subsidies (e.g. for external review/certification, concessional finance, research and

development); de-risking tools (e.g. guarantees, insurance, equity investments); and project development support.^{65 66} At the same time, it is important to remove inconsistent policy signals, such as taxes and subsidies favouring fossil fuels, to change the risk-return perceptions of investors. Box 5 describes different types of technical support for the development of the green bond market in the Association of Southeast Asian Nations (ASEAN) region.

The applicability and effectiveness of market support instruments is strongly dependent on country-specific circumstances, including on the level of development of the financial system.

BOX 5: Examples of supporting green bonds in Asia

Several Asian countries have supported the development and issuance of green bonds over the past years, often with the support of regional organisations. The Asian Development Bank (ADB) recently published a guidance document for issuing green bonds, which covers all the steps required in labelling bonds as green, including examples, and key resources for green bond issuers and their deal teams. For the broader topic of bonds linked to the Sustainable Development Goals (SDGs), in 2021, the ASEAN Capital Markets Forum issued a primer for the issuance of SDG bonds. It aims to be complementary to existing work on green, social and sustainable bonds and is targeted at “use of proceed” bonds as the most common type of sustainability-linked bonds.

In Malaysia, the Securities Commission Malaysia (SC) established a Green SRI Sukuk and Bond Grant Scheme in 2018 and expanded it in 2021. Sukuks are sharia-compliant bond-like instruments used in Islamic finance. The scheme includes grants for offsetting 90% of the external review costs for a green sukuk and income tax exemptions for the recipients of the SRI Sukuk and Bond Grant Scheme for a period of five years until 2025.



Sources: ADB (2021)⁶⁷; ACMF (2021)⁶⁸ MSFI⁶⁹

3.5 LEADING BY EXAMPLE

Apart from recalibrating regulatory instruments and policies, public actors can also support climate compatible financial system development through spearheading efforts in their own institutions. Central banks can for example set up climate or sustainable finance units tasked with realigning its own resources towards climate compatible investments and to mainstream climate compatible finance within the institution. Public institutions may align their operations, budgets, financial portfolios and assets with targets of climate-compatibility. Ministries of Finance can issue sovereign green bonds to establish a domestic green bond market. Such leadership can be particularly effective in cases where private actors still lack capacities to engage with green bonds and help to build trust in a new asset class. The NGFS encourages central banks to include sustainability considerations in their portfolio management, proposing different approaches on how supervisory authorities can manage the complexity of climate-related risks:⁷⁰

- Internal network approach: An internal cross-divisional network structure coordinates climate-related work within the organisation. It combines diverse expertise from different divisions of the organisation with the staff members in the network not working full time on climate-related issues.
- Hub & spokes model: A dedicated core team working full time on climate-related issues with individuals as spokes in other divisions
- Dedicated unit approach: A centralised team composed of experts on climate compatible finance works full-time to coordinate across all divisions.

Some NGFS members such as the Banque de France started to publish annual Socially Responsible Investment (SRI) reports in 2019.⁷¹ In the case of the Banque de France, the reports describe the results of its responsible investment strategy that applies to its own funds and pension portfolios. The European Central Bank adopted an SRI policy for its pension fund that inter alia led to a replacement of all equity benchmark indices with low-carbon equivalents that helped to reduce the funds' carbon footprint.⁷²

3.6 CAPACITY BUILDING

Setting new standards, incentives and requirements is not the only measure public and private institutions can take to advance the transformation of the financial system. Accompanying these measures with targeted capacity building initiatives can enhance the acceptance by market participants and accelerate their uptake and integration into operational practices.

When introducing new ESG reporting standards for capital markets, it makes sense to offer training programs to asset managers to ensure that they are familiar with the new requirements. Banks that introduce sustainable banking guidelines can similarly ensure effective implementation by rolling out such guidelines together with workshops and seminars for their staff. Financial sector actors might also want to ensure that degree programs offered by universities and business schools address climate change related issues in a way that graduates will be equipped with the necessary skills such as familiarity with global best practice approaches for identifying and disclosing climate-related risks.

Business associations and specialised think tanks such as business academies can play an important role in supporting capacity building efforts. They are ideally placed to connect local expertise with international best practices and to develop tailored capacity building programs using training-of-trainers techniques which may increase the reach of courses and seminars to a broad audience.

4



INTERNATIONAL COOPERATION ON CLIMATE COMPATIBLE FINANCE

International cooperation plays an important role in supporting climate compatible financial system development. Depending on the country context, for many key actors, such as regulatory and supervisory authorities, climate change is still an emerging issue. Likewise, both public institutions and private financial sector actors often are only beginning to adopt new policies and practices geared towards sustainability. They are therefore often still in the process to build in-house capacities and explore what instruments are most suitable for managing climate-related risks and shifting investments in the specific local context. International cooperation in form of technical assistance and through knowledge-sharing and peer-to-peer learning in form of international networks can function as an important catalyst to build up capacities.

4.1 TECHNICAL ASSISTANCE

Technical assistance is a key instrument to support governments and other stakeholders that have an aspiration to make their financial systems climate compatible. Possible activities depend on the country's context and the degree of capacity that already exists. Box 6 describes an example of a comprehensive technical assistance programme supporting green financial sector reform in Vietnam.

For countries that are in the early stages of climate compatible financial system development, the first steps will typically include the identification of national priorities and needs. Technical assistance at this stage can include capacity needs assessments that help identifying key actors and interventions to strengthen their knowledge and expertise on climate compatible financial system development. Tools such as the GIZ and Frankfurt School *Sustainable Finance Policy Navigator*⁷³ provide a systematic framework that can support in structuring needs assessments and in developing country specific roadmaps for capacity development.

Concrete activities that countries might want to pursue at the early stage can be trainings and workshops with specific sub-groups (e.g., commercial banks, national development banks, financial regulators) to raise awareness or the organisation of study tours to offer peer-to-peer learning opportunities with more advanced organizations in other countries. The GIZ Sector Programme Financial System Development offers, for example, targeted open access e-learning programmes for practitioners and policymakers interested in sustainable finance. Programmes offered include an introductory course to sustainable finance⁷⁴ as well as a course particularly tailored for policymakers, regulators and their advisers that are interested to learn about sustainable finance taxonomies (forthcoming).

The development of green finance roadmaps (see chapter 3.1) particularly benefits from organizing multi-stakeholder consultation workshops mapping the landscape of climate compatible financial system development. This may help actors to better understand the actions they can take as part of a coordinated effort to align the national financial system with climate and development objectives. For example, in Indonesia, GIZ is supporting the consultation process for a sustainable finance taxonomy through international technical expertise. Study tours can be a powerful instrument for helping individuals of a specific actor group to learn how more advanced institutions have approached the introduction of new instruments. Central banks that want to introduce green banking guidelines may use study tours to provide opportunities for local banks to learn from their regional and international peers how the instrument has helped them to open new business opportunities. This may support a higher acceptance of green banking guidelines by framing them as an opportunity rather than an administrative burden.

For countries that have already developed a roadmap with activities for supporting climate compatible financial system development, technical assistance can include more targeted support for supervisory and regulatory authorities to recalibrate existing regulations or the development of guidelines for financial institutions or taxonomies that define climate compatible investments. Through the *Green Finance Market Regulation and Green Bonds (FiBraS)* project GIZ supports the Central Bank of Brazil in aligning the country's financial sector with sustainability goals. Activities include strengthening capacities in the application of sustainability-related regulatory and supervisory instruments such as climate risk scenario analysis and disclosure.⁷⁵ Support for central banks is also provided through the NDC Partnership's *Readiness Support for Greening Central Banks* programme which matches central banks' capacity building needs with international partners' support.⁷⁶

Technical assistance can also support individual financial actors to develop new financial products and the regulatory environment, technical infrastructure and required capacities for their implementation. A frequent capacity gap encountered during the introduction of green bonds for example is the lack of local experts that have the capacity to certify these bonds. Issuers therefore must rely on international certifiers associated with higher costs which can be a barrier for further market development. Technical assistance targeted at establishing a group of local certifiers can help to improve the enabling environment for green bonds and remove these barriers. Through the Programme Macroeconomic Reform – Green Growth GIZ supported the State Bank of Vietnam to develop regulations on green bonds, including the development of a local verification market for green bonds⁷⁷ (see Box 2 and Box 5 in chapter 3.4 on technical assistance to support green bonds markets).

BOX 6: Technical cooperation on green financial sector reform in Viet Nam

The Programme “Macroeconomic Reforms – Green Growth” cooperated with several stakeholders in Viet Nam to mobilise private investment for green growth. The main cooperation partner was the State Bank of Viet Nam. In addition, cooperation partners included commercial banks, the State Securities Commission and the stock exchange. Project interventions took place at three levels:

- Supporting the development of an integrated green financial policy framework, including credit, refinancing, fiscal and financing policies for the green banking and finance sector, as well as the capital markets.
- Development of innovative instruments for financing green investments such as credit facilities and programs for green projects and green sectors, refinancing scheme, environmental and social risk management in credit activities, green bonds, and green indexes.

- Training for staff of partner institutions to improve their competency in developing and implementing green banking and finance policies and programs, and in providing green financial products.

Key outcomes of the programme are the State Bank’s introduction of a “green projects catalogue”, a green bonds concept, and a green credit programme providing access to USD 240 million for green investments in Viet Nam. The State Bank further introduced social and environmental risk assessments in lending activities of the banking sector. Moreover, the Ho Chi Minh Stock Exchange launched the first Green Index (Vietnam Sustainability Index), tracking sustainability performance of 20 listed companies in Vietnam.

Sources: GIZ (2016)⁷⁸ and GIZ⁷⁹

Technical assistance is provided both through bilateral cooperation as well as through multilateral institutions. It is particularly well positioned to support front-runners and pilot innovative approaches of cooperation that might be replicated and scaled-up at a later stage. For example, in Pakistan, GIZ supported the State Bank to develop green banking guidelines that provide an environmental due diligence framework that all commercial banks must apply. After a phase of voluntary application, these became mandatory for all banks. As a result, Pakistani banks became more interested in the opportunities of climate compatible financing leading to one bank pursuing accreditation with the Green Climate Fund (GCF).⁸⁰

Multilateral financial institutions such as the IFC, the World Bank and the Asian Development Bank (ADB) have been supporting partner countries in financial system development for several years. Next to efforts to supporting the development of capital markets and increasing the inclusivity of financial markets, this also includes targeted support for building capacities for environmental aspects. The IFC for example has been providing capacity building support to financial institutions in the application of the equator principles, a framework to assess and mitigate en-

vironmental and social risks of projects. Building on these established working relationships can help making capacity building programs targeted at climate compatible financial system development more effective.

For institutions providing financial assistance, such as multilateral development banks (MDBs), technical assistance is an important instrument in the development stage of projects and programs. It helps addressing knowledge, policy and regulatory risks that prevent investments. Technical assistance can therefore have an indirect mobilisation effect for climate compatible investments that is however difficult to quantify due to the long-time nature of its impacts.⁸¹

Multilateral climate funds such as the GCF and the Climate Investment Funds (CIFs) also play an important role for technical cooperation on climate compatible financial system development. The GCF has a dedicated Programme for Readiness and Preparatory Support that is also accessible for actors of the financial system through GCF national designated authorities (NDAs) (see Box 7 for more details).

BOX 7: The role of the Green Climate Fund in supporting climate compatible financial system development

The GCF is well-positioned to assist financial sector actors in aligning operations with the goals of the Paris Agreement for several reasons:

- As an operating entity of the financial mechanism of the Paris Agreement, the GCF possesses in-depth technical knowledge about the Agreement's structure and related supporting processes such as National Adaptation Plans (NAPs) and Technology Needs Assessments (TNAs). This enables the GCF to provide targeted capacity building support for financial actors interested in aligning their operations with the Agreement's objective or developing policy guidance thereto.
- The GCF has a set of investment criteria that are applied by an independent technical advisory panel to assess whether projects have a clear climate rationale and support country ownership as well as sustainable development objectives. Sharing the experience in the application of investment criteria with financial actors in developing countries and emerging markets can help them to develop new approaches for financing climate compatible development in the specific local context.
- Through the GCF's direct access modality, regional, national, and local financial actors such as commercial banks can enter in a formal partnership with the Fund that enables them to implement GCF projects. Through these partnerships, the GCF can support approaches such as climate compatible banking or the introduction of new financial products. Accreditation with the GCF entails a requirement for accredited entities to demonstrate that their overall portfolio evolves in a direction that is compatible with the GCF's objectives. Accredited entities must further demonstrate that they meet the GCF's fiduciary standards and possess the capacities and processes to implement projects in accordance with the GCF's environmental and social safeguards. Accreditation with the GCF is therefore also a process that strengthens governance and institutional arrangements within applicant organisations. Actively supporting its network of accredited entities through capacity building and knowledge sharing in these efforts can extend the impacts of the GCF beyond its funded projects.
- The Fund has a dedicated Readiness and Preparatory Support Programme that offers capacity building support for countries. National Designated Authorities (NDAs) can use GCF Readiness funds to support the transition of the domestic financial sector. This includes the development of strategic frameworks for low-emission investments as well as support to develop project concepts. Readiness funds can also be used by recipient countries to support regulatory and supervisory authorities in developing and issuing guidelines for climate compatible financing such as the development of green taxonomies or green banking guidelines. NDAs can also use Readiness funds to support private sector actors to design and create new green financial products or set up market support instruments such as green bond principles or other measures that create an enabling environment for green finance. Support can further be used to build green finance knowledge and capacity of financial sector actors.



4.2 INTERNATIONAL NETWORKS

Next to technical cooperation, international networks of financial sector actors have become an increasingly important instrument for mobilising action and providing opportunities for knowledge sharing and cooperation. They often function as platforms for jointly advancing research and developing guidance that can assist their members in introducing new climate-related measures. As such, these networks sometimes also obtain standard setting functions by formulating guidelines or aspirational targets that their members strive to adhere to. The NGFS for example partnered with climate scientists and economists to design climate scenarios for central banks and supervisors that can function as a reference point for all central banks for understanding how physical and transition risks could evolve in the future⁸².

Table 5 provides an overview of international networks and initiatives and displays which of the actors presented in section 2.2 cooperate within each network. Among the partnerships listed in the table, the UNEP Finance Initiative (UNEP FI) has been the first global initiative engaging systematically with the financial sector. It helped to develop the industry-based principles for responsible banking, sustainable insurance and responsible investments that are applied by banks, insurers and institutional investors worldwide.

A new initiative launched at COP 26 that brings together existing initiatives aimed at net zero is the Glasgow Financial Alliance for Net Zero (GFANZ). It houses several alliances of different financial sector actors that have committed to transition their portfolios to net zero by 2050 or earlier. Net zero pledges can be an important instrument to deliver emission reductions. For them to be effective there need to be robust standards and criteria for measuring and reporting progress on their implementation. In addition, the success of the initiative strongly depends on the commitment and capacity of the individual financial institutions and other signatories to ensure that the high-level commitments translate to tangible action within each institution. In March 2022, the UN Secretary General therefore tasked a *High-Level Expert Group on Net Zero Emissions Commitments of Non-State Entities* to develop standards and definitions for net zero targets as well as criteria for verifying progress towards commitments. The group will also develop a roadmap to translate these standards and criteria into international and national legislation.⁸³

TABLE 5: Overview of International Networks and Initiatives

	Launch Date	Central Banks	Financial Supervisors	Commercial Banks	Insurance Companies	Government	Institutional Investors	Stock Exchanges	Financial Services	Market Associations	Development banks	
Task Force On Climate-Related Financial Disclosures	2015	●	●	●	●	●	●					Task Force of the Financial Stability Board that released recommendations for more effective climate-related disclosures
Network for Greening the Financial System (NGFS)	2017	●	●									Group of Central Banks and Supervisors sharing best practices and contributing to developing environmental and climate risk management in the financial sector and mobilise mainstream finance to support the transition toward a sustainable economy.
Sustainable Banking and Finance Network (SBFN)	2012	●	●	●		●						Platform for knowledge sharing and capacity building on sustainable finance for financial sector regulators and industry associations across emerging markets.
Sustainable Stock Exchange Initiative (SSEI)	2012						●					Peer-to Peer learning platform for exploring how exchanges, in collaboration with investors, regulators, and companies, can enhance corporate transparency – and ultimately performance – on ESG issues and encourage sustainable investment.
UNEP Finance Initiative	1992	●		●	●		●				●	Partnership between UNEP and the global financial sector to mobilise private sector finance for sustainable development.
Principles for Sustainable Investment	2006	●		●	●		●				●	Framework for guiding the incorporation of ESG factors in investment decisions and active ownership.
Principles for Sustainable Banking	2019			●								Framework for ensuring that signatory banks' strategy and practice align with the vision society has set out for its future in the Sustainable Development Goals and the Paris Climate Agreement.
Principles for Sustainable Insurance	2012				●							Framework for the insurance industry to address environmental, social and governance risks and opportunities.
Principles for Responsible Banking (PRB)	2019			●								Framework for ensuring that signatory banks strategy and practice align with the SDGs and Paris Agreement. In 2022 an academy was launched to support its implementation.
Principles for Responsible Investment (PRI)	2005						●					International network of institutional investors with the goal to better understand the investment implications of environmental, social and governance issues and integrating them into investment decisions.
Sustainable Insurance Forum	2016		●									Network of insurance supervisors and regulators working together to strengthen understanding and responses to sustainability issues.

Source: Own representation

4 INTERNATIONAL COOPERATION ON CLIMATE COMPATIBLE FINANCE

	Launch Date	Central Banks	Financial Supervisors	Commercial Banks	Insurance Companies	Government	Institutional investors	Stock Exchanges	Financial Services	Market Associations	Development banks	
Glasgow Alliance for Net Zero (GFANZ)	2021		●	●		●						Global coalition of leading financial institutions committed to accelerating the decarbonisation of the economy. Brings together existing and new net zero finance initiatives in one sector-wide coalition.
Net-Zero Banking Alliance	2021	●										Coalition of banks which are committed to aligning their lending and investment portfolios with net zero emissions by 2050.
Net-Zero Asset Managers Initiative (NZAM)	2020						●					International group of asset managers committed to supporting the goal of net zero greenhouse gas emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5 degrees Celsius; and to support investing aligned with net zero emissions by 2050 or sooner.
Net-Zero Asset Owner Alliance	2019						●					Coalition of asset owners that are committed to transitioning its investment portfolios to net zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C above pre-industrial levels.
Paris Aligned Investment Initiative (PAII)	2019						●					Collaborative investor-led global forum enabling investors to align their portfolios and activities to the goals of the Paris Agreement.
Net-Zero Insurance Alliance	2021			●								Group of insurers committed to transition their insurance and reinsurance underwriting portfolios to net zero greenhouse gas (GHG) emissions by 2050, consistent with a maximum temperature rise of 1.5°C above pre-industrial levels by 2100.
Net-Zero Financial Service Providers Alliance	2021							●				Group of financial service providers committed to supporting the goal of global net zero greenhouse gas emissions by 2050 or sooner, in line with the ambition to limit the global temperature increase to 1.5°C above pre-industrial levels.
Climate Action 100+	2017						●					Investor-led initiative with the aim of ensuring that the world's largest corporate greenhouse gas emitters take necessary action on climate change.
Coalition of Finance Ministers for Climate Action	2019						●					Brings together finance ministers from over 70 countries that have signed on to the aspirational Helsinki Principles that promote national climate action, especially through fiscal policy and the use of public finance.
G20 Sustainable Finance Working Group	2016	●			●							Mandated to identify institutional and market barriers to green finance and options to enhance the mobilisation of private capital for green investment. Successor of the Green Finance Study Group.
Institutional Investors Group on Climate Change	2001						●					European Membership body for investor collaboration on climate change. Aims at supporting and enabling the investment community in driving significant and real progress by 2030 towards a net zero and resilient future.
International Development Finance Club (IDFC)	2011										●	The IDFC is a network of 27 national and regional public development banks
Financial Centers for Sustainability (FC4S)	2017	●			●				●			Collective of international financial centers that work to expand sustainable finance and help achieve the Sustainable Development Goals and the Paris Agreement.
Partnership for Carbon Accounting Financials	2015		●	●		●		●		●		Partnership of financial institutions working together to develop and implement a harmonised approach to assess and disclose the GHG emissions associated with their loans and investment.
Global Alliance for Banking on Values	2009		●									Network of independent banks with pursuing efforts to change the banking system so that it is more transparent, supports economic, social and environmental sustainability.

Source: Own representation

5



MEXICO

The following chapter focuses on climate compatible financial system development in Mexico. It describes the country context in terms of climate change and climate policy, current status of the financial system, and ongoing policies, ap-

proaches and initiatives for supporting climate compatible financial system development. The chapter then identifies recommendations for action and for enhanced international cooperation.

5.1 CONTEXT

Economic data⁸⁴

POPULATION (MIL)	INCOME LEVEL	GDP (BILLION USD)	GDP/CAPITA (USD)	ANNUAL GDP GROWTH (2016-2020) (%)
128.93	Upper middle income	1'074	8480	-0.31

Climate Change⁸⁵

CO2 (MT)	CO2/PER CAPITA (T)	CLIMATE RISK INDEX RANKING (2010-2019)	RENEWABLE ELECTRICITY PRODUCTION % OF TOTAL EXCL HYDRO	NATIONALLY DETERMINED CONTRIBUTION (NDC)
472	3.74	59	5.49	Updated in 2020

Financial sector⁸⁶

CREDIT RATING (MOODY'S)	LENDING INTEREST RATE (%)	DOMESTIC CREDIT TO PRIVATE SECTOR (% OF GDP)	MARKET CAPITALISATION OF LISTED DOMESTIC COMPANIES (% OF GDP)	IMF FINANCIAL DEVELOPMENT INDEX
Baa1 (negative)	7.7	39	37	0.72

5.1.1 CLIMATE CHANGE AND CLIMATE POLICY IN MEXICO

The following section describes key climate-change related trends, including physical risks, transition risks and policy developments, that may drive climate compatible financial systems development in the country.

Expected climate change impacts in Mexico include increase in fluvial floods, more frequent droughts in the central and northern regions, a rise in frequency and intensity of hurricanes in the Pacific north-east and on the Atlantic coast, and continued loss of forest coverage. There could be significant economic impacts and associated impacts on the financial sector related to a reduction of agricultural productivity, declining fisheries and changes in fishing activity, the impact of severe weather events on infrastructure, the tourism sector, ports, energy and communications, and increases in health costs.⁸⁷

Mexico is among the top 20 emitters of GHG emissions globally. Currently, the transport sector, power generation and industries are the largest sources of GHG emissions with a share of 25%, 20% and 18% respectively of total emissions. The country has plans to significantly grow its renewable energy generation capacity over the coming years and has increased the share of natural gas in its total energy supply at the expense of the use of oil. However, recent political decisions refocusing on fossil-fuel based energy supply including the construction of a new oil refinery and a new budget allocation for the modernisation” of coal, diesel, gas and oil-fuelled power plants may increase transition risks and the potential for stranded assets.^{88 89 90}

Regarding climate policy, Mexico’s 2012 Climate Change Law, which was amended in 2020, and the Special Program on Climate Change (PECC 2020-2024) are key elements of the country’s regulatory framework. Currently, Mexico is in the process of revising its NDC. Previous commitments included, to unconditionally reduce its greenhouse gas (GHG) emissions by 22% by 2030 compared to a baseline under a business-as-usual (BAU) scenario, and to a reduction target of 36% conditional on, inter alia, an international carbon price and access to low-cost financial resources.

The PECC guides medium-term planning and implementation of climate change policy. Under its strategic priority 4.2 “Promoting and aligning budgeting and financing to-

wards climate change adaptation and mitigation targets”, the PECC 2020-2024 includes 3 measures related to the banking sector with responsibility assigned to the Ministry of Finance and Public Credit (SHCP). These are:

- Measuring the operational expenditures of the banking sector due to adverse effects of climate change specifically from the sargazo alga, drought, flood, hurricane and fire,
- Measuring and incentivising financing from the banking sector for clean energy investments
- Increasing access to finance for companies with sustainable projects in renewable energy, building, housing, transport, agriculture, forestry and fisheries, as well as infrastructure projects to generate environmental benefits

5.1.2 CURRENT STATUS OF THE FINANCIAL SECTOR

Mexico's financial sector is bank dominated⁹¹ and relatively small compared with other emerging markets. The non-bank sector⁹² is relatively less developed but has been growing at a faster pace than banks in recent years. Banks are mostly focused on corporate lending, although consumer lending and mortgages have grown rapidly in the past years, targeting predominantly the middle and higher-income segments⁹³, with Non-Bank Financial Institution (NBFI) serving SMEs and low-income individuals. In terms of financial inclusion, the number of people with access to bank accounts is relatively low, with only about half of the population having a formal bank account.⁹⁴ At the same time, according to a recent study, over 90% of consumers use mobile banking services.⁹⁵

In general, the banking sector is well-capitalised, liquid and considered to be resilient to large shocks.⁹⁶ In recent years, Mexican regulators, including the National Banking and Securities Commission (CNBV) and Bank of Mexico (BANXICO) have made significant efforts to comply with the Basel II and III requirements.⁹⁷ The relative financial stability of the sector may provide scope for strengthening climate compatible investing and lending practices, as the sector is not under undue financial stress.

The commercial banking sector is highly concentrated around conglomerate structures, that usually include a bank, a pension fund, a brokerage company, an insurance company, and a mutual fund.⁹⁸ Thus, a shift towards more climate compatible practices by one or a few of the main players, can already have significant implications for the market as a whole. The seven largest banks are all fully owned by financial groups and account for about 80% of total bank assets. Except for Banorte, they are at least partly owned by non-Mexican corporations, implying a potential for profiting from climate-related investment, disclosure and risk management practices employed by parent companies from developed markets.

Since 2018, Mexico has had two stock exchanges. Companies have the option to list their debt or capital securities on just one of the two exchanges, and their securities will be quoted on both. Overall, Mexico has the 2nd largest stock market in Latin America after Brazil. In recent years, it has become a hub for fintech companies,⁹⁹ indicating a potential for innovation which may also be supportive for a transformation towards a climate compatible financial system.

Table 6 provides an overview of key actors in Mexico's financial sector who play a role in supporting climate compatible financial systems development.

TABLE 6: Key actors in Mexico's financial sector and their respective mandates

ROLE	WHO	DESCRIPTION (WHERE RELEVANT)	KEY CLIMATE-RELATED INITIATIVES
Regulator	Ministry of Finance and Public Credit (SHCP) National Banking and Securities Commission (Comisión Nacional Bancaria de Valores, CNBV) Bank of Mexico (BANXICO) National Commission of the Retirement Savings System (CONSAR)	BANXICO: Central Bank, monetary authority, lender of last resort	BANXICO: active on sustainable finance (see chapter 6.2.1),
Financial industry associations	Mexican Banking Association (Asociación de Bancos de México) ¹⁰⁰ Green Finance Advisory Councils (Consejo Consultivo de Finanzas Verdes)	ABM: representing 49 financial institutions; does policy advocacy, knowledge sharing etc. CCFV: Composed of financial associations, commercial, multilateral and development banks, rating agencies and issuers	ABM: involved in various initiatives on sustainable finance
Development Banks	2 major ones: Nacional Financiera (NAFIN), Banco Nacional de Comercio Exterior (Bancomext) Others: Banco Nacional de Obras y Servicios Públicos (Banobras), Fideicomisos Instituidos en Relación con la Agricultura (FIRA), Sociedad Hipotecaria Federal (SHF) (see here for a full overview)	Nafin and Bancomext are second-tier banks that lend through commercial banks and other financial intermediaries. Nafin focuses on SMEs and micro businesses, incl. strategic equity investments. Bancomext does export finance, infrastructure finance (energy and maritime transport), tourism sector finance and SME finance.	Nafin is accredited as direct access entity with the GCF and has issued green bonds. Bancomext has acted as front-runner and risk-taker in renewable energy finance and has developed a robust Environmental and Social Management System (ESMS).
Major commercial banks	BBVA, CitiBanamex, Santander, Banorte, HSBC, Inbursa, and Scotia Bank (see here for an overview of all commercial banks)	BM: active on sustainable finance (see chapter 6.2.1),	Various initiatives related to reporting, environmental risk management, green financial products etc. Citibanamex e.g. applies TCFD recommendations since 2018.
Stock Exchange	Mexican Stock Exchange (Bolsa Mexicana de Valores, BMV); Institutional Stock Exchange (Bolsa Institucional de Valores) (BIVA)		BMV: Part of the Sustainable Stock Exchanges Initiative (SSEI), annual sustainability report , BMV Sustainability index BIVA: FSTE4Good ESG index
Other actors	Sustainable Finance Committee (CSF) Climate Finance Working Group of the Inter-ministerial Commission of Climate change (CICC)	CSF: Public advisory body created in 2020 within the Financial System Stability Council (CESF). It is integrated by SHCP, CNBV, Central Bank and the other financial regulator ¹⁰¹ CICC: main interministerial coordination mechanism on climate change	

5.2 CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT IN MEXICO

5.2.1 CURRENT POLICIES, APPROACHES AND INITIATIVES FOR SUPPORTING CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

Mexico is taking relevant steps in making its financial system more climate compatible as described in the following six sub-chapters. A recent report by the Sustainable Banking and Finance Network (2021)¹⁰² has credited the country, along with few other developing and emerging markets, of being in the “advancing” stage of implementing sustainable finance frameworks.¹⁰³ Many of the initiatives for promoting a climate compatible or sustainable financial system have been industry-led.

SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

Key actors within Mexico’s financial sector have demonstrated high-level political commitment to sustainable finance. Although, to date, there is no overarching strategic document on greening the financial sector or on making it more climate compatible, the Bank of Mexico has repeatedly stressed the importance of transitioning to a more sustainable, inclusive, and competitive economy.¹⁰⁴ It is also one of the founding members of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), and has partnered with UNEP Inquiry to explore how to incorporate environmental and social risks into mainstream risk strategies of Mexican financial institutions.

At the same time, political commitment to a climate compatible financial system has been affected by changes in staff of key financial sector regulators and in political priorities following the 2018 presidential elections. Although, actors such as the Ministry of Finance and Public Credit (SHCP), the Central Bank and the National Banking and Securities Commission (CNBV) are aware of the importance of climate change for financial stability, recent political priorities have focused on social justice and local livelihoods.

The Mexican Banking Association (ABM) has played a leading role in many of the industry-led initiatives related to green finance and is a member of the global Sustainable Banking and Finance Network (SBFN). In 2016, ABM published a protocol for banks, the ‘Mexico Sustainability Protocol’, which contains a general commitment to sustainable finance and – as of 2021 – has been signed by 31 commercial and 7 development banks.

In 2017, the Green Finance Advisory Council (CCFV) was established. Composed of financial associations, commercial, multilateral and development banks, rating agencies and issuers, it aims to promote sustainable finance through the development of market principles and standards, public policy that affects investment practices, mandates, and regulations, as well as outreach, training, and financial education.

In parallel, there exist initiatives on practitioner level, such as the “The Bank Explains”¹⁰⁵ initiative by ABM that engages the public on key topics related to sustainable finance. At a regional level, the Bank of Mexico has promoted dialogues with key stakeholders, such as the 2019 Green Finance Seminar for Central Banks and Supervisors from North, Central and South America, with the aim of taking the green finance and climate risk agenda forward.¹⁰⁶

BOX 8: Five Principles of the Sustainability Protocol by ABM

1. **Establish an internal sustainability policy** with the support of the Board, aimed at making the banking operation increasingly sustainable.
2. **Develop a risk management system that incorporates the consideration of social and environmental risks** as important factors in credit and investment decisions.
3. **Formulate guidelines and introduce instruments** to promote the financing of projects that generate a positive environmental and social impact.
4. **The resources used in the daily operation of the signatory institutions must be used efficiently.** This will reduce costs, increase competitiveness and decrease dependence on natural resources, as well as their associated goods and services.
5. **Institutions are expected to provide detailed and complete information on their sustainability actions,** and to respond to investors and civil society with transparency.

DATA, STANDARDISATION AND DISCLOSURE

Various efforts to improve standardisation and disclosure of climate and sustainability related data are ongoing.

ABM's 'Mexico Sustainability Protocol' for banks asks financial institutions to provide detailed and comprehensive information on their sustainability actions, and to respond transparently to investors and civil society, but does not provide reference to tangible standards for reporting. An informal evaluation of the state of implementation of the protocol indicates that it provides a reference for promoting sustainability in the financial sector. Implementation of the protocol would be supported inter alia by 1.) periodicity for reporting on the progress of the Protocol to allow for regular follow-up of its implementation; 2.) the establishment of implementation goals; 3.) higher degree of involvement of senior management; 4.) the preparation of an Implementation Guide, specifying suggested measures that banks can carry out to implement the recommendations of the Protocol, key resources that they can take advantage of, and examples of initiatives and good practices implemented by other institutions that provide some concrete ideas.¹⁰⁷

Moreover, several commercial banks are involved in **international voluntary industry-led initiatives** to measure, manage and disclose environmental, climate, social and governance risk such as the Equator Principles and the Principles for Responsible Investment and of Responsible Banking.¹⁰⁸ Most of the leading banks publish sustainability reports or integrate sustainability related information into their annual report. Citibanamex has, for example,

been implementing the TCFD recommendations since 2018.¹⁰⁹ Banorte published its first report on climate change related risks and opportunities in line with TCFD recommendations in 2021.¹¹⁰

In 2020, ABM developed a **green lending taxonomy and reporting framework** for Mexican banks, the "Taxonomy of Green Finance". The initiative for the development of the taxonomy came from the banking sector. The taxonomy has been tested by 8 commercial banks with the aim to serve as baseline and provide lessons learned for broader implementation.¹¹¹ Currently SHCP is in the process of developing an official taxonomy with a broader focus on sustainable development and the SDGs, which may be made mandatory in the future. Work has begun on a pilot version of the taxonomy for SDGs 5, 13 and 11 on gender, climate action and cities. SHCP aims to finalise a draft by the end of 2022.

With respect to the **capital markets and pension funds**, CONSAR, Mexico's pension fund regulator introduced mandatory reporting requirements, starting from 2022, on how ESG factors impact the risks and opportunities of the investments by pension funds.¹¹² There is no requirement for ESG disclosures for new security issuances. However, voluntary guidance by the stock exchange BMV exists.¹¹³ Institutional investors have requested Mexican public debt and equity issuers to adopt the TCFD framework and SASB standards¹¹⁴. New issuances have begun to include ESG disclosures in their prospectus and offering documents. It is also common practice for recent and pre-existing instru-

ments to include such disclosures in their yearly and quarterly reports.¹¹⁵ The Green Finance Advisory Council (CCFV) provides support in improving ESG related reporting.

Overall, ongoing initiatives related to data, standardisation and disclosure in the Mexican financial market are promising. As in other jurisdictions, there is a need for higher level of detail and comparability and broader scope of coverage of data. More than 70% of Mexican credit institutions for example find the available environmental information insufficient when lending to a private non-listed company.¹¹⁶

PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

A comprehensive study commissioned by the Bank of Mexico (BANXICO) and UNEP Inquiry published in 2020, presents a first in-depth diagnosis of how prepared Mexican financial institutions are to address environmental and climate risks. The report also includes recommendations to promote and develop disclosure of physical and transition risk analysis for regulators and banks. While most financial institutions see the relevance of having environmental and social risk management systems in place to support decision-making, the **analysis of climate-related physical and transition risks and opportunities and their integration into financial decision making are still at an early stage**. Amongst other factors, this is caused by a lack of board competencies, low level of involvement by senior management, limited technical capacities and limited sectoral analysis of climate risks. Of the asset managers interviewed for the study, more than 50% were not aware of the recommendations of the TCFD or of other relevant international standards; an additional third of interviewees were still in the phase of analysing if and how to implement TCFD recommendations. Moreover, within the majority of credit institutions and asset managers, the environmental and social risk analysis that takes place is mostly qualitative and has little depth.¹¹⁷

In 2017, ABM introduced the Social and Environmental Risk Analysis (HARAS) tool, which allows for the detection of sensitive environmental and social areas during the credit granting process. In 2018, the HARAS tool went into a testing phase. At the moment, much of the private sector-led work on climate-related risks and opportunities takes place in the context of the TCFD Mexico Consortium. In parallel, Bank of Mexico is currently working on an ESG related stress test, which includes climate-related risks and is expected to be published next year. Work

has started on the development of an economic model that evaluates impacts of climate change scenarios for the countries. In a consecutive step, the design of a roadmap for potential financial sector regulation on climate risk reporting is planned.

The large financial institutions in the country tend to have an environmental and social risk management system. Bancomext was one of the frontrunners to introduce a systematic evaluation of Environmental and Social Risks in its credit approval process for large projects in sensitive sectors.¹¹⁸ Also, development bank Banobras has recently implemented an environmental and social safeguard system, a Gender Policy and committed to a Strategy for Sustainable Banking¹¹⁹.

MARKET SUPPORT INSTRUMENTS

Mexico has been a global leader among emerging markets in the issuance of green and sustainable bonds. In 2018, the CCFV published the Green Bond Principles MX, based on the Green Bond Principles of the International Capital Markets Association (ICMA).¹²⁰ Since 2015, 75 bonds have been issued in the country labelled as sustainable, green or social, out of which 21 were green bonds.¹²¹ The first green bond was issued in 2015 by development bank NAFIN for the financing of wind farms. The year 2021 has been the most successful so far in terms of volume of sustainable bonds with almost EUR 8 billion issued (181.780 million pesos).¹²² In 2022, the Mexican leasing company MEGA issued the first sustainable bond by a private sector non-bank financial institution (NBFI) in Mexico focusing on social and sustainable ventures, especially SMEs which are largely underserved by traditional banks.

In addition, various other green financial instruments have been used in the country, including green credit lines and green credit guarantees, with support from national and international public funds.¹²³ Moreover, large commercial banks such as Citibanamex offer sustainability funds to their clients. The “Laboratory for Financial Innovation” (LAB Mexico)¹²⁴ supported by IDB, the German government, ABM and CCFV, works on generating ideas for financial innovation and new financial instruments supporting sustainable development. At the same time, market players have stated a lack of bankable projects and investable companies fulfilling environmental and/or ESG criteria as one of the barriers to further investment.

LEADING BY EXAMPLE

Government institutions have taken a key role in the country with respect to sustainable and climate compatible finance, especially leading the establishment of a green and sustainable bond market.

NAFIN issued the country's first green bond in 2015. In 2020, the Mexican government, through its Ministry of Finance issued the first sustainable sovereign bond linked to the SDGs globally for a value of EUR 750 million. It was bought mostly by institutional investors and was based on a framework for defining criteria for SDG related impacts for sovereign bonds, published by the Ministry earlier in the year and reviewed internationally, including by UNDP and VIGEO EIRIS, an environmental rating agency.¹²⁵ In July 2021, a second sovereign SDG bond was placed for a value of EUR 1'250 million at an exceptionally low interest rate.¹²⁶ In 2019, the national development bank FIRA was the first institution globally that issued a green bond that invests in agricultural projects.¹²⁷

The Bank of Mexico considers ESG factors in its own investment decisions and has included green bonds into its universe of eligible investment assets.¹²⁸

CAPACITY DEVELOPMENT

A number of national initiatives support the development of technical and institutional capacities for green finance, including the following:

- CCFV has offered an online programme to become a certified Environmental, Social and Governance Analyst.
- The BANXICO offers classes and talks on sustainable finance on its website.¹²⁹
- The Mexican stock exchange offered a programme on key sustainability issues for representatives of companies that had or were planning to issue shares on the stock exchange.¹³⁰
- The Autonomous Technical Institute of Mexico (ITAM) offers courses on sustainable finance, targeting mostly banks, pension funds, insurance companies, development banks, regulators, and some state governments.¹³¹ The university Tecnológico de Monterrey also offers sustainable finance trainings.

Generally speaking, capacity development in the public sector is more challenging than in the private sector as staff in public institutions changes frequently.

5.2.2 INTERNATIONAL COOPERATION

Many international cooperation partners active in the country currently support activities related to climate finance and more specifically related to green and climate compatible financial systems development, including GIZ, USAID, the World Bank, IFC, IDB, AFD, GGGI and UK-funded projects.

Some key initiatives include:

- GIZ is planning a new bilateral cooperation project funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) which aims to support the mobilization of climate finance. The project is planned to start in the second half of 2022 and will cooperate with SHCP, the Ministry of Environment (SEMARNAT) and other government partners. Over the past years, GIZ, through the Mexican-German Climate Change Alliance and other projects, has supported various activities on green financial systems development, amongst other the development and implementation of the Banking Sustainability Protocol, supporting the launch of the TCFD Mexico Consortium work on non-financial disclosure and environmental stress testing by financial institutions, sustainable finance trainings, and online courses on climate finance and on project preparation.¹³²
- GGGI implements a GCF Readiness project¹³³ in partnership with the National Banking and Securities Commission (CNBV) and SHCP (both being financial regulators). Relevant activities are:
 - Strengthen ESS and ESRMS knowledge and skills of Financial Intermediaries to successfully allocate sustainable/green/climate finance
 - Provide technical facilitation and coordination support to the National Banking and Securities Commission (CNBV) in the development and

implementation of ESG and climate-related risk disclosure regulation

- Enhance knowledge and capacities of executing entities, financial intermediaries, issuers, subnational governments, NGOs, among other stakeholders, on GCF, climate change, Environmental and Social Safeguards (ESS), gender and climate-related risks, and other ESG topics.
- IFC, financed by the German International Climate Initiative (ICI) supports the creation of domestic markets for climate financing to increase climate compatible lending.¹³⁴
- The UK Department for Business, Energy and Industrial Strategy (BEIS) funded the Climate Finance Accelerator which provides support to identify bankable low-carbon projects and potential sources of finance. It offers training and advice to project owners for the technical and financial preparation of project proposals.¹³⁵
- IDB has been supporting climate compatible, green and sustainable finance in Mexico for many years. For example, IDB provides technical assistance to development banks such as Banobras, Bancomext, NAFIN, SHF and others, including on the implementation of environmental and social risk management systems.

5.3 RECOMMENDATIONS

5.3.1 RECOMMENDATIONS FOR POLICIES, APPROACHES AND INITIATIVES THAT SUPPORT CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

As described above, private and public actors in Mexico are actively taking steps in making the country's financial system more climate compatible. The following actions could strengthen this process:

- Building bipartisan awareness and commitment to climate compatible financial system development may help to prevent disruptions in climate policy when changes in political leadership take place. In this context, it may be useful to enhance the understanding of the socioeconomic risks and opportunities of climatic impacts, and of mitigation and adaptation activities, and their importance for preserving livelihoods. This also requires improved availability of data on climate and environmental (e.g., loss of biodiversity and forest cover) risks and opportunities with material impacts on the financial system.
- It is recommended to further strengthen inter-institutional coordination, including through the four working groups of the Sustainable Finance Committee and the Working Group on Climate Finance of the Interministerial Commission on Climate Change.
- The participatory development of a joint strategy document or roadmap for a climate compatible financial system led by decision makers in the financial sector in collaboration with the Ministry of Environment (SEMARNAT) could contribute to building bipartisan awareness and commitment. Such a strategy document may contain an assessment of investment needs and gaps and a quantification of climate-related risks (see below). In general, more decisive public sector action for greening the financial system could strengthen private sector commitment, as many existing initiatives have been driven by private sector actors so far.
- The development of a taxonomy for sustainable finance by SHCP is an important step to increase

green financial flows. It is recommended to align the taxonomy with international best-practices such as promoted by the International Platform on Sustainable Finance launched by the European Union in 2019¹³⁶. At the same time, it should consider the specific characteristics of the country, the availability of technologies and capacities to collect and process the required data. It may be helpful to explicitly recognise trade-offs between climate change goals and shorter-term development objectives, and potentially consider a transition phase where criteria for what qualifies green investments become stricter over time.

- Once the taxonomy moves beyond its piloting phase, its effectiveness would be significantly enhanced, if it was included into regulatory requirements such as mandatory reporting and portfolio standards for minimum amounts of green investment. This would also require additional capacities for reporting on compliance with the taxonomy.
- The effectiveness of the taxonomy for sustainable finance may also be enhanced if there was a parallel process that defines which investments are unsustainable in line with international best-practices, and not aligned with key goals under the country's climate priorities. In this context, it is recommended to develop "just transition corridors" for activities that do not qualify as sustainable to enable a just transition for companies and workforce currently invested in such activities. Going beyond supporting green financial flows, SHCP and BANXICO could consider disincentivising non-climate compatible or non-sustainable investments. This could be done by introducing higher borrowing costs or higher capital ratios for financial institutions with higher amounts of non-sustainable investments on their balance sheets, reflecting the higher financial risks of non-sustainable investments.
- With respect to standardisation and disclosure of climate and sustainability related data, it is recommended to introduce mandatory ESG reporting requirements at the Mexican stock exchanges, where feasible in line with TCFD recommendations.
- In addition, it is recommended to improve the granularity, consistency, comprehensiveness and materiality of ESG and climate change related information, and alignment with international standards. Improving data and reporting may include improving existing information reported by companies and for financial products (e.g., by adding more precise definitions and more detail) as well as encouraging reporting from a wider range of companies, projects and financial products. In this context, it is also recommended to support capacity development in the private sector, including of mid-sized and small companies, for the correct collection, use and disclosure of data. At the same time, it is key to clearly communicate the benefits of environmental reporting to involved actors.
- Regarding climate risk management, tackling the issues identified by the recent analysis by BANXICO and UNEP¹³⁷ would support a more robust management of climate risks. These issues include a lack of board competencies, low level of involvement by senior management, limited technical capacities and limited sectoral analysis of climate risks.
- The development and dissemination of a financial system-wide climate stress test may help raise awareness of climate risks not just for the whole economy but also for specific sectors, regions and individual financial institutions and other actors of the financial system. BANXICO has already begun to proactively pursue the development of a climate stress test.

5.3.2 RECOMMENDATIONS FOR INTERNATIONAL COOPERATION

Given their long track-record of supporting the government of Mexico and private sector associations on topics related to green financial systems development, international cooperation actors are well-placed to support the recommendations mentioned above. In the following areas, international cooperation may specifically add value:

- Within the financial sector, the Ministry of Finance is proactively coordinating support offers by donors. At the same time, due to the large number of international organisations supporting activities related to climate finance and climate compatible financial system development, improved donor coordination would ensure that funds are effectively used, and limit the burden on recipients for coordination efforts.
- International cooperation may support cross-sectoral and multi-institutional coordination processes among actors in Mexico's financial sector, e.g., in developing a roadmap for climate compatible financial systems development. International cooperation may also support specific technical analysis, such as climate stress testing and scenario analyses, by drawing on international best-practices and facilitating international exchange of experiences.
- With respect to capacity development efforts, it is recommended to work on approaches that institutionalise capacity building for personnel in the public sector in the light of frequent staff changes. It is also recommended to support capacities of actors that tend to profit less from international support, including public institutions at the provincial level, smaller development banks and private financial institutions. There have been good experiences with online programmes that enable a wide reach to interested participants.
- When working at the provincial level and with smaller financial institutions, it may be useful to simplify methods for reporting on ESG issues, assessing climate risks and defining green and brown investments.
- International cooperation may also support the development of green projects and green financial products in the light of the high liquidity available in the financial market. This may include specifically supporting green financial product development in cooperation with non-bank financial institutions targeting unbanked parts of the population and SMEs.

6



SOUTH AFRICA – COUNTRY CASE STUDY

The following chapter focuses on climate compatible financial system development in South Africa. It describes the country context in terms of climate change and climate policy, current status of the financial system, and ongoing

policies, approaches and initiatives for supporting climate compatible financial system development. The chapter then identifies recommendations for action and for enhanced international cooperation.

6.1 CONTEXT

Economic data¹³⁸

POPULATION (MIL)	INCOME LEVEL	GDP (BILLION USD)	GDP/CAPITA (USD)	ANNUAL GDP GROWTH (2016-2020) (%)
58.56	Upper middle income	1'074	5656	-0.60

Climate Change¹³⁹

CO2 (MT)	CO2/PER CAPITA (T)	CLIMATE RISK INDEX RANKING (2010-2019)	RENEWABLE ELECTRICITY PRODUCTION % OF TOTAL EXCL HYDRO	NATIONALLY DETERMINED CONTRIBUTION (NDC)
433	7.50	78	1.93	Updated in 2021

Financial sector¹⁴⁰

CREDIT RATING (MOODY'S)	LENDING INTEREST RATE (%)	DOMESTIC CREDIT TO PRIVATE SECTOR (% OF GDP)	MARKET CAPITALISATION OF LISTED DOMESTIC COMPANIES (% OF GDP)	IMF FINANCIAL DEVELOPMENT INDEX
Baa1 (negative)	10.1	108	313	0.65

6.1.1 CLIMATE CHANGE AND CLIMATE POLICY IN SOUTH AFRICA

The following describes key climate-change related trends, including physical risks, transition risks and policy developments, that may drive climate compatible financial systems development in the country.

South Africa is already witnessing significant impacts of climate change. Between 1931 and 2015, the country has experienced significant warming, with certain regions showing warming rates of 2°C per century or higher – twice the global rate of temperature increase. The low mitigation scenario¹⁴¹ for the period of 2080-99 estimates that temperature increases of more than 4°C are likely for the entire country and increases of more than 6°C for certain parts.¹⁴² Climate zones within the country are shifting, ecosystems are being degraded, and pressures on already scarce water resources are high. There is also evidence that extreme weather events in South Africa are on the rise.¹⁴³ The country is particularly exposed to droughts, flooding, extreme storms as well as fires, and has seen an increase in heat wave conditions, dry spells and rainfall intensity.¹⁴⁴ ¹⁴⁵ According to a recent study conducted in collaboration with the National Treasury of South Africa and other key financial institutions¹⁴⁶, droughts, water shortage and flooding are also perceived as major physical sources of risk for the financial sector. Other physical risks considered material to the sector include wildfires, seawater temperature increases and ecosystem loss, in particular aquatic systems degradation.

In terms of transition risks, South Africa also faces a great challenge. The country is heavily reliant on coal for power generation, export revenue as well as employment, and its per capita CO₂ emissions are amongst the highest in the developing world. According to Statistics South Africa (Stats SA), the country has a high unemployment rate and that youth remain vulnerable in the labour market, this transitioning period will place a heavier burden on the country in terms of finding alternative employment opportunities, and the related re-skilling that may be required. Electricity generation from fossil fuels accounts for about 80 percent of the country's emissions.¹⁴⁷ The country's National Planning Commission has identified a high risk of stranded assets in the South African coal industry¹⁴⁸, while the Climate Policy Initiative has estimated that South Africa faces transition risks amounting to more than USD 120 billion in present value terms between the years 2013 and 2035, driven by changes in global demand in coal and oil markets.¹⁴⁹

Concerning the climate policy environment, with South Africa being a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and having ratified the Paris Agreement, the country has affirmed its commitment to making a fair contribution to global efforts to address climate change by submitting its Nationally Determined Contribution (NDC). The country aims to reach net zero by 2050.¹⁵⁰ South Africa's National Climate Change Response Policy (NCCRP) also explicitly calls for the inclusion of the financial sector and the employment of a wide range of traditional as well as innovative finance instruments to achieve climate compatible development of the economy.¹⁵¹

In 2020, the Presidential Climate Commission (PCC) was formed to oversee and facilitate a just and equitable transition towards a low-emission and climate-resilient economy. Comprising representatives from government, business, labour, civil society and research, the PCC underlines the importance that the poorest, marginalised, and most vulnerable are supported and uplifted in the shift towards a more sustainable society.¹⁵²

In 2021, it was, moreover, announced that the governments of South Africa, France, Germany, the United Kingdom and the United States of America, along with the European Union, formed a long-term 'Just Energy Transition Partnership'. The Partnership aims to support South Africa in decarbonising its economy and will mobilise an initial commitment of 8.5 billion US dollars through grants, concessional loans, investments and risk sharing instruments as well as other mechanisms. South Africa's just transition not only foresees to move to a low-emission economy but also to promote employment and livelihoods.¹⁵³ While the Partnership has attracted widespread media attention and the interest of other coal-reliant emerging economies and developing countries like Indonesia, Vietnam or India, concerns have been expressed over the lack of transparency on how the money will be spent as well as over the risk of double-counting funds. More clarity might be forthcoming however, as South Africa is currently developing an investment plan for implementing actions under the partnership.¹⁵⁴

A revised Climate Change Bill has also been introduced to Parliament on 18 February 2022 by the Department of Forestry, Fisheries and the Environment (DFFE), and would, if it becomes law, form the first legal framework in South Africa to respond to the challenges and impacts

of climate change. The bill foresees emission targets and requires an alignment of and integration of climate change considerations into policies by all organs of state, among other things.^{155 156 157} Stakeholders interviewed for this study consider the Bill to be an important piece of legislation, with great potential impact. Other important policy frameworks are the National Climate Change Response Policy of 2011 as well as the National Climate Change Adaptation Strategy which was approved in 2020.

6.1.2 CURRENT STATUS AND DEVELOPMENT OF THE FINANCIAL SECTOR

Compared to other emerging markets similar in size and GDP, South Africa has a well-developed, well-capitalised and highly active financial sector. The sector is considered at par with global banking norms in relation to capital adequacy, regulation and skilled labour. The foreign exchange market is particularly active, with the Johannesburg Stock Exchange (JSE) ranking among the world's largest exchanges in terms of market capitalisation^{158 159}.

With regard to its different financial markets, the South African bond market is well-developed and has consistently been used as a source for financing larger projects, albeit predominantly by government entities. South Africa's equity market is sizeable, with active trading via the JSE. The credit market, including trading, structuring and investing in the credit risk of governments, businesses and households, however, is in its relative infancy¹⁶⁰. The banking sector is also highly concentrated around five large banks which control about 90 percent of total assets¹⁶¹. For the 'big four', namely Standard Bank, ABSA, Nedbank and FirstRand Group, South African ownership accounts for more than 50 percent and, in the case of Nedbank, for more than 70 percent of shares.

According to the latest Financial System Stability Assessment by the IMF, buffers have allowed the financial system to recover from the economic shocks related to the COVID-19 pandemic. Downside risks however remain, with potential implications for asset quality, profitability, and solvency. Banks are also found to be at risk of notable capital erosion under a severe stress scenario. Financial inclusion remains a challenge and has slowed in recent years, as account utilisation remains limited and micro, small, and medium-sized enterprises (MSME) experience difficulties in obtaining access to finance. While financial sector regu-

lation is generally considered strong, more intensive supervision is needed, with a stronger focus on governance and less reliance on external auditors¹⁶².

Table 7 provides an overview of key actors in South Africa's financial sector relevant for supporting climate compatible financial systems development.

6.2 CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT IN SOUTH AFRICA

6.2.1 CURRENT POLICIES, APPROACHES AND INITIATIVES FOR SUPPORTING CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

Various publications have emphasised the financial sector's progressiveness in adopting financial sector regulatory reforms in more general terms as well as integrating environmental issues into its practices.^{165 166} A recent report by the Sustainable Banking and Finance Network has credited the country, along with few other developing and emerging markets, of being in the 'advancing' stage of implementing sustainable finance frameworks.¹⁶⁷ Awareness has greatly increased across the public and private sectors, and the understanding of climate risks and sustainable finance has become more consistent across stakeholders. The report does not however differentiate between climate-related and other sustainability issues in its overall assessment.

Despite all this, concerns have been expressed regarding process being slow and many of the current efforts remaining voluntary in nature.¹⁶⁸ The following chapters thus take a closer look at the country's various policies and initiatives in support of creating a climate compatible financial system, describing the status quo, identifying gaps as well as offering recommendations.

SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

Finance is seen as key to the transition to climate compatible development. With financial needs being huge, public funding will not be sufficient and the private and financial sectors' importance in shifting investments towards the ob-

TABLE 7: Key actors in South Africa’s financial sector and their respective mandates

ROLE	WHO	DESCRIPTION (WHERE RELEVANT)	KEY CLIMATE-RELATED INITIATIVES
Regulator	Financial Sector Conduct Authority (FSCA) Prudential Authority (PA), South African Reserve Bank Johannesburg Stock Exchange (JSE)	Under the “Twin Peaks” ¹⁶³ financial framework model, the Financial Sector Conduct Authority (FSCA) is responsible for supervising the conduct of financial institutions, while the Prudential Authority (PA) is responsible for regulating banks, insurers etc. The Johannesburg Stock Exchange (JSE) also acts in the capacity of a regulator.	Members of the South African Sustainable Finance Initiative (see below) PA is also a member of the Sustainable Banking Network and the Sustainable Insurance Forum (SIF)
Banking Associations	Banking Association South Africa (BASA)	Advocates the views of the banks on legislation, regulation, and social and economic issues that affect the industry.	Sustainable Finance Committee
Development Banks	Development Bank of Southern Africa (DBSA)	The DBSA is a government-owned development finance institution with the mandate to promote economic growth as well as regional integration for sustainable development projects and programs in South Africa and the wider Sub-Saharan Africa.	DBSA is an accredited entity of the Green Climate Fund (GCF). It is an active member of the Global Innovation Lab for Climate Finance.
Major commercial banks ¹⁶⁴	Standard Bank, ABSA, Nedbank and FirstRand Group	The ‘big four’ rank highest in the African continent according to assets.	Signatories to the Equator Principles
Stock Exchanges	JSE and four more operational exchanges, wholly owned by JSE: AltX, for small and mid-sized listings, Yield X for interest rate and currency instruments, the South African Futures Exchange (SAFEX) and the Bond Exchange of South Africa (BESA).	JSE is the largest exchange in the African continent and caters to five financial markets: equities and bonds as well as financial, commodity and interest rate derivatives.	The JSE is a signatory to the UNPRI and a founding member of the Sustainable Stock Exchanges Initiative (SSE). It also introduced the FTSE/JSE Responsible Investment index series and launched dedicated segments for green and sustainability bonds.
Other actors	Sustainable Finance Initiative / Climate Risk Forum	Hosted by the Banking Association South Africa under the Climate Risk Steering Group, chaired by National Treasury. The initiative consists of financial sector regulatory agencies and industry associations.	Various activities around the topic of sustainable finance, such as the development of the South Africa Green Finance Taxonomy.
	Presidential Climate Commission	Formed in 2020, the Commission’s role is to oversee and facilitate a just and equitable transition towards a low-emissions and climate-resilient economy. It comprises representatives from government, business, labour, civil society and research.	Climate finance constitutes one of the Commission’s focus areas.
	Batseta	Council of Retirement Funds for South Africa.	Supporting efforts of ESG integration, e.g. by publishing the Responsible Investing and Ownership Guide.
	National Business Initiative (NBI)	NBI is a voluntary coalition of South African and multinational businesses working towards sustainable growth and development in South Africa.	Various activities and publications e.g. on decarbonisation projects and access to climate finance.

jectives of climate mitigation and climate adaptation has been acknowledged. As will be outlined in the following chapters, efforts to crowd in private investment range from regulatory instruments to market incentives.

Within the financial system, the National Treasury has been leading the way in terms of climate compatible and sustainable finance¹⁶⁹. In 2017, the National Treasury formed the Sustainable Finance Initiative by convening a working group of regulatory agencies and industry associations to develop a framework document on sustainable finance.¹⁷⁰ This effort culminated in its Technical Paper “Financing a Sustainable Economy”, published in 2021, which gives a thorough assessment of the status quo and lays out recommendations for the future¹⁷¹.

While consultations were being held in relation to the paper, the National Treasury, together with BASA, also established the so-called Climate Risk Forum to oversee implementation of the paper’s key recommendations. Subsequently, various working groups were established with the following purpose:

- Developing a green finance taxonomy which was launched in 2022,
- Developing technical guidance for financial institutions, including on environmental and social risk management, the use of science-based methodologies as well as disclosures as per the Task Force on Climate-related Financial Disclosures (TCFD),
- Developing a benchmark climate risk scenario for use in stress tests by the financial sector,
- Building capacity and competency, respectively.

The working groups consist of representatives from banking, capital markets, pensions, insurance, private equity, representatives from local development finance institutions, and relevant government departments, such as the Department of Forestry, Fisheries and Environment (DFFE).^{172 173}

Besides the National Treasury, other stakeholders are noteworthy in their efforts to raise awareness on and promote sustainable finance. This includes the JSE which has been very proactive, being the first stock exchange in Africa to introduce a sustainability index, to launch a dedicated segment for green and sustainable bonds and to require

businesses to report on ESG risks beyond legal obligations.¹⁷⁴ Moreover, BASA has established a Sustainable Finance Committee to address issues related to sustainable finance¹⁷⁵, while Batseta actively supports retirement funds within the country to integrate ESG considerations into their investment processes¹⁷⁶.

According to experts interviewed for this study, South Africa’s approach to engagement has proven particularly effective in gaining broad acceptance among stakeholders on activities related to climate finance and just transition. Extensive consultations were being held, for example, around the NT’s Paper “Financing a Sustainable Economy” or the country’s green finance taxonomy. The Climate Change Bill was also prepared in consultation with the National Economic Development and Labour Council (Nedlac) – a vehicle established specifically to bring together government authorities, labour, business and community organisations in order to negotiate on economic, labour and development issues the country is facing. While such a consultative approach is time-consuming and labor intensive it has been highlighted as being fairly unique to South Africa and could serve as an example for other countries.

DATA, STANDARDISATION AND DISCLOSURE

Currently, listed companies in South Africa are obliged to disclose ESG data.

The country has issued the so-called King Reports on Corporate Governance since 1994, containing guidelines for the governance structures and operation of companies in South Africa. The latest report, the King IV Governance Code, came into effect in 2016. The Code sets out broad principles in relation to ethical behaviour, highlights the need for businesses to achieve a sustainable performance in both economic, social and environmental terms, and stipulates that businesses should publish an annual Integrated Report. Principle 17 specifically addresses institutional investors, requiring them to promote good governance and sustainable value creation in the companies in which they invest. There are also various sector supplements, including one for retirement funds. The latter stipulates the application of the Code for Responsible Investing in South Africa (CRISA), which is explained in more detail in the following subchapter^{177 178}. Taking effect in 2017, listed companies must apply all the King Code principles and the King Code practices the JSE has made mandatory. For other businesses the Code remains voluntary^{179 180}. Most of the country’s large banks are listed on the JSE.

The Prudential Authority reportedly surveyed South African banks and insurers on their implementation of the recommendations of the TCFD in 2019, finding that both banks and insurers are acutely aware of climate change being material to their business but that more comparable climate-related reporting is required.^{181 182} According to experts interviewed for this study, ESG data remain a great challenge, both on the business as well as the financial side. Only the country's major banks and certain (listed) companies report according to GRI, TCFD or CDP and there is a need for more comprehensive and standardised ESG data, as elsewhere in the world. Concerns also remain around how much information to disclose. Meanwhile, there are plans to mandate businesses and financial institutions to report to the FSCA as per the TCFD recommendations. To guide and inform regulators and financial sector users on good financial disclosure of climate-related risks and opportunities, the Climate Risk Forum's "Disclosure Working Group"¹⁸³ published the "Principles and Guidance for Minimum Disclosure of Climate Related Risks and Opportunities". JSE also published two disclosure guidance documents on sustainability and climate, respectively, in June 2022¹⁸⁴.

In addition, the Sustainable Finance Initiative, led by the National Treasury, developed the South Africa Green Finance Taxonomy, which was published in April 2022. Very similar to the EU Taxonomy, the taxonomy is understood as a classification system in which green assets, projects, activities and sectors are defined in line with international best practice and national priorities. The current taxonomy classifies economic activities according to whether they substantially contribute to climate change adaptation or climate change mitigation. Four more environmental objectives are supposed to be included at a later stage, namely sustainable use of water and marine resources, pollution prevention, sustainable resource use and circular economy and ecosystem protection and restoration¹⁸⁵. It further includes requirements for activities to adhere to social safeguards and "do no significant harm" to any environmental objectives¹⁸⁶. The central objective of the taxonomy is to provide clarity and certainty in selecting green investments in line with international best practices and national priorities and standards. The government further hopes that it will help to achieve the following¹⁸⁷.

- Unlocking large-scale capital for climate-friendly and green investment in South Africa by increasing the credibility and transparency of green activities;

- Reducing financial risks through enhanced management of environmental and social performance;

While it is too early to make predictions on its future application, the Taxonomy has found widespread acceptance among stakeholders. According to experts interviewed for this study, this can be largely attributed to its extensive consultation process. There are reportedly also plans to make its application mandatory. Moreover, the NBI is currently running several pilot projects in relation to the taxonomy, e.g. with the DBSA, large commercial banks and municipalities. The case studies are supposed to be made available through the Sustainable Finance Initiative's website.

PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

Pension funds (and insurances) are currently the only financial institutions in South Africa which are legally obliged to consider ESG factors when making an investment.

Following an update in 2011, Regulation 28 under the South African Pension Funds Act now includes the requirement to "consider environmental and social issues in assessing factors that materially affect the sustainable long-term performance of retirement fund assets". Funds are also required to provide an investment policy statement in which they explain what ESG factors they consider and how the fund intends to assess and monitor the same.^{188 189 190}

The beforementioned King IV Governance Code, mandatory for listed companies, also expects businesses to establish corporate governance structures that provide oversight in respect not only to financial but also social, environmental and other risks. More specifically, the Code requires businesses to consider ESG factors as part of their "appropriate standard of care", as is required by the Companies Act and other regulations in South Africa.^{191 192}

In addition, several voluntary principles have been published. For one, the beforementioned CRISA was launched in July 2011 as a voluntary investor-led initiative. Its principles provide guidance to institutional investors and their service providers on how to develop and implement a sustainable investment strategy and analysis and align investment activities, accordingly. The Code also encourages its addressees to annually report on its application. The FSCA endorses CRISA as a means of giving effect to Regulation 28. The Code is currently being revised in order to incorporate the current debate surrounding climate change risks

and new TCFD recommendations. To date, CRISA has mainly been adopted by those financial institutions that also adhere to international principles, such as the UN PRI. It is more widely applied among equity funds and less so by private equity and venture capital actors.^{193 194}

Furthermore, BASA has developed the “Principles for Managing Social and Environmental Risk”, in partnership with its members. The principles highlight the role which financial institutions play in terms of sustainable development and guide banks on how to conduct their operations, lending and investing practices in a corresponding manner. BASA members commit themselves to the principles.¹⁹⁵

According to experts, ESG risk management practices differ greatly but climate risks are particularly high on the agenda for asset owners, such as large banks, pension funds and insurances. There has also been a change in perception and risk appetite concerning investments in climate mitigation and transition technologies, e.g. cleaner energy alternatives. Looking at the integrated and TCFD reports by major banks, the institutions commit to global standards on the governance of ESG risks, such as the IFC Performance Standards and Equator Principles (EP). The reports further illustrate how the banks conduct ESG risk management across portfolios and functions.^{196 197 198} Smaller players however reportedly often lack the needed capacity and know-how.

Lastly, the PA has established a Prudential Authority Climate Think Tank (PACTT) with a mandate to promote, develop and coordinate the PA’s regulatory and supervisory response to physical and transition climate risks.¹⁹⁹ Moreover, in 2022, the South African Reserve Bank published a climate change modelling framework for financial stress testing in Southern Africa.²⁰⁰

MARKET SUPPORT INSTRUMENTS

Several guidelines exist for South African financial institutions. The FSCA has published the “Guidance Notice: Sustainability of investments and assets in the context of a retirement fund’s investment policy statement”²⁰¹, with the aim of assisting retirement funds in implementing Regulation 28 (see previous chapter), while Batseta, with support from industry stakeholders and the IFC, released its own “Responsible Investment and Ownership Guide: A tool for integrating ESG into the investment process” in 2013. This guide similarly supports South Africa retirement funds in meeting the requirements of Regulation 28 but also provides

guidance on the integration of ESG factors into investment decisions in relation to international best practices²⁰².

In addition, South Africa has made use of specific market instruments to promote the development of a climate compatible financial system. For example, DBSA and GCF together launched the first private sector climate finance facility in Africa, targeted at infrastructure projects which help mitigate or adapt to climate change. The programme makes use of, inter alia, credit enhancements to de-risk and increase the bankability of climate projects to crowd in private sector investment.²⁰³

Also managed by DBSA on behalf of DFFE is the Green Fund, which supports green energy generation, green technologies and the “greening” of sectors such as transport, among other things.²⁰⁴ The bank has also communicated plans to establish water reuse infrastructure as a new financial asset class in South Africa to address the country’s water deficit.²⁰⁵

Other instruments, such as the Carbon Tax Act from 2019 and the Renewable Energy Independent Power Producer Programme (REIPPP) from 2011, have also proven effective in reallocating capital and attracting private sector investment into renewable energies.^{206 207} With the aim of reaching net zero by 2050, the carbon tax has recently been increased to 11 Rand (about EUR 9) and is supposed to increase incrementally to reach at least 468 Rand (EUR 28) by 2030, and 873 Rand (EUR 112) beyond 2050.²⁰⁸ On the business side, the energy efficiency savings tax incentive (Income Tax Act, Section 12L) has proven effective in reducing companies’ carbon footprint and overall energy demand.

LEADING BY EXAMPLE

As previously outlined, the National Treasury has been leading the way in terms of climate compatible and sustainable finance. To date, South Africa is the first and only African country that developed a green finance taxonomy.²⁰⁹

DBSA and GCF also launched the first private sector climate finance facility in Africa, as described in the previous chapter.²¹⁰

Moreover, JSE has taken up a pioneering role in promoting sustainable finance. It was the first emerging market stock exchange to introduce a Socially Responsible Investment Index (SRI Index) and requires listed businesses to comply with and report on the King IV Code of Corporate Governance. The SRI Index has since been replaced with the FTSE/JSE Responsible Investment index series, for which

JSE adopted the FTSE ESG ratings methodology²¹¹. JSE was also the first stock exchange in Africa to launch dedicated segments for green bonds in 2012 and sustainability bonds in 2020. According to the number of issuances and value, it is presently the leading issuer of green bonds on the continent. Both Johannesburg and Cape Town have also issued municipal green bonds, with Cape Town having issued the only verified and accredited municipal green bond (Climate Bonds Standard and Certification Scheme) in Africa to date.^{212 213 214}

CAPACITY DEVELOPMENT

Several of the stakeholders described in the previous chapters actively support their members and signatories in building capacity and know-how.

For example, as part of the Climate Risk Forum chaired by the National Treasury, a specific working group has been established (“Capacity Working Group”) to provide training on various materials being developed by the Forum’s other working groups, such as the Taxonomy Working Group²¹⁵. The Climate Risk Forum further offers webinars on selected topics surrounding climate compatible and sustainable finance, such as climate risk management.

Batseta has also supported its members, namely South African retirement funds, in complying with the amended Regulation 28 and CRISA.

Moreover, BASA has worked with the Banking Sector Education and Training Authority (BANKSETA) to develop environmental and social risk assessment training. Banks and other financial institutions have also ramped up their efforts to build capacity and know-how on ESG risk and climate risk management and conduct their own training programmes.^{216 217 218}

Despite these efforts, a lack of capacity, know-how and technical skills is considered a major challenge to advance ESG integration and disclosure as well as climate finance across the public, financial and private sector.

6.2.2 INTERNATIONAL COOPERATION

According to experts, bilateral and multilateral development and donor agencies have played a substantial role in funding and providing technical assistance in relation to climate mitigation, climate adaptation, climate finance and

climate compatible financial system development. These include GIZ, KfW Development Bank, Agence Française de Développement (AFD), Government of Norway, UK Foreign, Commonwealth & Development Office (FCDO), GCF, World Bank, IFC and UN Environment. Capacity building and training initiatives were highlighted in particular by interview partners.

Looking at activities specific to the financial sector, the South Africa Green Finance Taxonomy was developed with support from IFC, in partnership with the Swiss State Secretariat for Economic Affairs (SECO) and the Swedish International Development Cooperation Agency (SIDA) as well as Carbon Trust.²¹⁹

The same players as well as the governments of Luxembourg and the Netherlands also supported the Climate Risk Forum’s Sustainable Finance Working Group in developing the Sustainable Finance Handbook for South Africa. The Handbook provides an extensive overview on the country’s regulations, initiatives and other efforts in relation to sustainable finance, with reference to international norms and practices. It not only supports the government but also financial institutions and other stakeholders to understand the status quo, including gaps and shortcomings which remain.²²⁰

In terms of climate finance, GCF’s support has proven crucial, for example, in establishing the country’s private sector climate finance facility, while the governments of France, Germany, the UK and the USA, along with the European Union, all form part of the recently launched “Just Energy Transition Partnership”. Other players, such as the Boston Consulting Group, have also done substantial work in mapping the country’s decarbonisation needs and pathways in order for South Africa to achieve net zero by 2050.

Within the framework of the Climate Investment Funds, South Africa further cooperates with the African Development Bank (AfDB), the World Bank and the IFC on the “Accelerating Coal Transition Investment Programme”. The objective of the programme is to accelerate the transition away from coal while ensuring a holistic, integrated, socially inclusive, and gender-equal approach. A draft investment plan was published by DFFE in September 2022.²²¹

6.3 RECOMMENDATIONS

6.3.1 RECOMMENDATIONS FOR POLICIES, APPROACHES AND INITIATIVES THAT SUPPORT CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

Public and private actors in South Africa are actively working on making the country's financial system more climate compatible. This includes actions by individual actors such as some commercial banks preparing risk disclosure reports aligned with TCFD guidelines, as well as efforts coordinated on the highest political and regulatory levels such as through the Presidential Climate Commission and the process for developing a green taxonomy. The following actions could help advancing on this pathway:

- The draft climate change bill, currently debated in Parliament, in its current form formulates an objective of creating greater policy coherence. Enhancing the coherence of different sectoral policies would help to amplify existing policy signals impacting decisions of financial actors.
- Further developing the existing regulation on ESG risk management and disclosure by defining mandatory elements that must be followed by all actors. A first step could be to gradually extend the existing mandatory requirements for pension funds, insurances, and listed companies to non-listed companies with large GHG emissions. Embedding this in capacity building measures will help to ensure that these actors will not be overwhelmed by these requirements. Capacity building measures should be coordinated between PA, SARB and FSCA.
- Continuing engagement in international forums to support harmonisation of existing ESG risk and disclosure standards will support the ability to evolve domestic legislation and reduce reporting burdens of local companies. An immediate next step could be to explore whether ESG reporting requirements could be further aligned with TCFD recommendations as some actors already apply these.
- Once actors are familiar with the green taxonomy and have built experience in reporting their alignment with it, the impact of the instrument could be strengthened by including the taxonomy into mandatory regulatory requirements.
- Complement the green taxonomy by developing just transition corridors for activities that do not qualify as green under the taxonomy to enable a just transition for companies and workforce currently invested in such activities. Through the Accelerating Coal Transition Programme and the Just Energy Transition Partnership South Africa is pioneering practical approaches to this regard and sharing and disseminating results with other sectors and the international community can provide useful insights, lessons learnt and best practices.
- Provincial governments and municipalities will play an important role in implementing new policies and regulations. This holds true for components of the climate bill but also, for example, for applying the new classifications of the green taxonomy. Ensuring that officials at provincial and municipal levels have adequate capacities will help the implementation of these new policies.
- The fact that South Africa already has a small group of early movers and frontrunners which practice effective ESG risk management and disclosure in line with international good practice could be used to facilitate peer-to-peer learning approaches to support knowledge transfer and diffusion.
- Explore options for adapting existing regulatory instruments so that they better integrate climate change. A starting point can be to assess the applicability and suitability of potential instruments such as exposure restrictions for high carbon assets and differentiated risk weights for the South-African context.
- While support for low-carbon activities is growing, both public and private investments to date have focused on the energy sector and will need to increase in the transport, housing and other high-emission and climate change affected sectors. Financing will also need to go along with stricter regulation that is not specific to the financial sector, such as legislation on clean transport. Mobilising additional public finance

for these sectors and deploying it in a way that crowds in private sector investment will therefore be critical. In addition, further efforts will be required to attract private investments in climate adaptation activities.

6.3.2 RECOMMENDATIONS FOR INTERNATIONAL COOPERATION

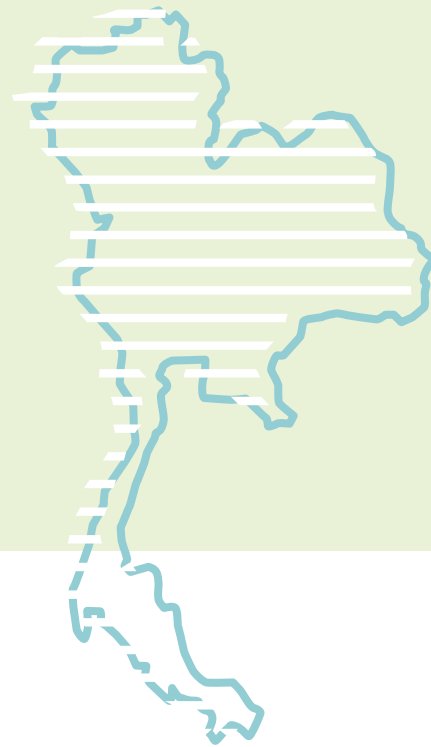
South Africa has active partnerships with many countries and institutions that also support making the financial sector more climate compatible. This includes both technical cooperation and financial assistance for the implementation of climate action. Utilising its well-established network of international partnerships can help South Africa continuing its path of aligning the financial sector with its climate objectives. Potential areas for deepened cooperation include:

- Explore options for extending and complementing existing partnerships to actors that traditionally have less access to international support, such as at the municipal level or private actors. For private sector actors this could include know-how and technical skills in relation to climate finance, climate risks and ESG risk management and disclosure.
- Like in many other countries, know-how on climate compatible finance is often still limited to senior management but lacking on technical levels. More generally, the labour force needs to be better qualified. Given the growing importance, risks and economic opportunities around climate and sustainable finance, investments in educational measures would not only improve vocational qualifications within the South African labour market but also promote employment.
- Accessing climate finance is difficult for most but especially smaller players. Financial institutions or projects eligible to either accredit themselves with GCF or access funds through partnerships are overwhelmed with the intricacies of international climate funding. Financial and technical support could help e.g., in project preparation.
- International support for building regional engagement and partnerships in Southern Africa could help to facilitate knowledge exchange and diffusion within the region. South Africa's experiences in e.g.,

developing the green taxonomy or a climate change modelling framework for financial stress testing can provide important lessons and insights for other countries.

- With the Just Energy Transition Partnership, South Africa is piloting a new form of international cooperation. Actively sharing success stories, lessons, and challenges of the partnership, in particular on aspects that relate to the financial sector, could provide useful insights for other countries looking at building similar partnerships.

7



THAILAND – COUNTRY CASE STUDY

The following chapter focuses on climate compatible financial system development in Thailand. It describes the country context in terms of climate change and climate policy, current status of the financial system, and ongoing policies,

approaches and initiatives for supporting climate compatible financial system development. The chapter then identifies recommendations for action and for enhanced international cooperation.

7.1 CONTEXT

Economic data²²²

POPULATION (MIL)	INCOME LEVEL	GDP (BILLION USD)	GDP/CAPITA (USD)	ANNUAL GDP GROWTH (2016–2020) (%)
69.63	Upper middle income	1'074	7187	1.59

Climate Change ²²³

CO2 (MT)	CO2/PER CAPITA (T)	CLIMATE RISK INDEX RANKING (2010–2019)	RENEWABLE ELECTRICITY PRODUCTION % OF TOTAL EXCL HYDRO	NATIONALLY DETERMINED CONTRIBUTION (NDC)
258	3.71	9	5.87	Updated in 2020

Financial sector²²⁴

CREDIT RATING (MOODY'S)	LENDING INTEREST RATE (%)	DOMESTIC CREDIT TO PRIVATE SECTOR (% OF GDP)	MARKET CAPITALISATION OF LISTED DOMESTIC COMPANIES (% OF GDP)	IMF FINANCIAL DEVELOPMENT INDEX
Baa1 (stable)	3.3	160	108	0.72

7.1.1 CLIMATE CHANGE AND CLIMATE POLICY IN THAILAND

Thailand is one of the most vulnerable countries to climate change. In the period 2000-2019, it experienced the third highest losses among countries worldwide due to the adverse effects of climate change when measured in purchasing power.²²⁵

The greatest hazard from climate change is the increased frequency and severity of floods. Thailand is one of the ten most flood-affected countries in the world²²⁶ and the average annual loss associated with flooding is approximately USD 2.6 billion.²²⁷ At the same time overall precipitation is projected to decline, which will have significant impacts on the agricultural sector, which consumes 70% of the country's water supply and employs about 40% of its population. Case studies project that resulting droughts might reduce rice production by up to 31% in some regions of the country without adaptation measures such as improved water management.²²⁸ Energy accounts for about 70% of Thailand's GHG emissions followed by agriculture (15%) and industrial processes and product use (9%). Transportation is responsible for about 40% of energy consumption followed by the industry (36%) and residential sectors (13%).²²⁹

On 07 November 2022 Thailand communicated an updated NDC to the UNFCCC that strengthens its unconditional GHG reduction target from previously 20% to now 30% below business-as-usual levels by 2030. The NDC mentions that Thailand can further increase its NDC to 40% subject to adequate and enhanced access to technology development and transfer, financial resources and capacity building support.²³⁰ It also updated its Long-term low greenhouse gas emission strategy (LT-LEDS). These updates include bringing forward the emission peak year from 2030 to 2025 and reaching carbon neutrality by 2050 and net zero greenhouse gas emissions by 2065.²³¹ As part of the next steps a climate change act that would enshrine the updated commitments will be tabled to the cabinet and parliament. Mitigation measures in the LT-LEDS focus on the energy and transport sectors, with the share of renewable energies projected to increase to 74% of total electricity generation by 2050 and 2035 onwards.²³²

7.1.2 CURRENT STATUS AND DEVELOPMENT OF THE FINANCIAL SECTOR

The Thai financial sector has matured significantly in the past decade. It has successfully diversified its products, and improved access to finance for businesses and households.²³³ Financial sector assets grew from 183% in 2007 to 271% of GDP in 2017, with non-bank financial actors contributing the lion share of this growth. Banks accounted for 46% of financial sector assets in Thailand in 2018, however their share decreased from 56% in 2007.²³⁴ The three largest commercial banks accounted for 44 percent of banking sector assets in 2018.²³⁵ The loan portfolio of commercial banks is focussed on the financial and insurance sector (23%), mortgages, real estate, and construction (20%), manufacturing (15%), consumer finance (14%) and wholesale and retail trade (13%).²³⁶

While improving in recent years, the inability of some economic actors, such as small and medium-sized enterprises (SMEs) to access financial products through commercial banks continues to be a gap in the Thai financial system.²³⁷ SMEs are a key driver of the economy and contributed 34% to Thailand's GDP in 2020²³⁸. Further, about 70% of all workers employed by enterprises in Thailand worked in SMEs in 2020. Government-owned specialised financial institutions (SFIs) play an important role to mitigate the access gap for SMEs and low-income households. Sometimes also dubbed as "state policy banks", they have a specific mandate to serve implementation of government policies by offering financial products that promote investment and economic development in specific sectors and regions. There are currently eight SFIs that include the Bank for Agriculture and Agricultural Cooperatives (BAAC), the *Small Business Credit Guarantee Corporation* and the Government Housing Bank. SFIs accounted for about 16% of financial assets in 2018²³⁹ and have been a key policy instrument to cushion the effects of the COVID-19 pandemic inter alia by offering favourable terms for debt restructuring and payment moratoriums.²⁴⁰ The Thai Credit Guarantee Corporation further supports access to finance for SMEs through stimulating bank loans by providing credit guarantees for SMEs that lack adequate collateral. Government agencies also offer capacity building support to SMEs, utilising coaching programs and peer-to-peer exchange.²⁴¹

Mutual funds and insurance companies accounted for 20% of financial sector assets in 2018. As a share of GDP, their assets have doubled over the last decade. The Thai capital markets are now largely on par with their regional peers.²⁴²

Competitiveness is very high in the Thai financial market across all segments, suggesting that actors offering climate compatible products could apply this as a strategy to distinguish themselves from their competitors. The market is further characterised by high liquidity and low interest rates, potentially limiting the leverage of monetary policies focussed on reducing the cost of financing.

TABLE 8: Key actors in Thailand’s financial sector and their respective mandates —

ROLE	WHO	DESCRIPTION (WHERE RELEVANT)	KEY CLIMATE-RELATED INITIATIVES
Regulator	Ministry of Finance (MoF)	Acts as policymaker. Is the owner of Thai SFIs.	MoF, BoT, SEC, OIC and the SEC have jointly established the Sustainable Finance Initiatives for Thailand in August 2021. Developed the Sustainable Financing Framework under which it intends to issue sovereign green, social and sustainability bonds, and loans.
	Bank of Thailand (BoT)	Supervises and regulates all Thai commercial banks. Supervises and regulates SFIs but needs MoF approval to issue SFI regulations and take corrective action.	Member of NGSF Working on a sustainable finance taxonomy for the Thai financial sector. Develops modelling framework for climate stress testing.
	Securities and Exchange Commission (SEC)	Regulates the Thai capital market, including primary and secondary markets.	Supporter of the TCFD. Strategic Plan 2020-2022 includes establishment of an ecosystem for a sustainable capital market. Member of the International Organization of Securities Commissions’ Sustainable Finance Network and Sustainable Stock Exchange initiative.
	Office of Insurance Commission (OIC)	Supervises the insurance sector.	Insurance Development Plan 2021-2025 includes a 3-year goal for all insurance companies to invest in and contribute to sustainable projects.
Banking Associations	Thai Bankers’ Association	Represents 16 Thai banks and engages in policy advocacy and knowledge sharing.	Developed Sustainable Banking Guidelines for Responsible Lending in 2019. Member of the SBN.
	Association of International Banks	Represents 20 foreign banks operating in Thailand	Signed the Sustainable Banking Guidelines for Responsible Lending in 2020.
Major commercial banks	Bangkok Bank, Krung Thai Bank, Bank of Ayudhya, Kasikornbank, Siam Commercial Bank		Energy Efficiency Revolving Fund SME Go Green Scheme
Stock Exchanges	Stock Exchange of Thailand (SET)	Operations include securities listing, trading clearing.	Member of the UN Sustainable Stock Exchanges (SSE) initiative.
Other actors	Board of Investments	Government Agency under the Office of the Prime Minister to promote investments in Thailand and overseas.	Mandate includes to promote activities that are environment-friendly, save energy or use alternative energy to drive balanced and sustainable growth.
	Thai Bond Markets Association	Bond industry association providing a functional role on market development, market convention and standards.	Hosts a ESG bond information platform to facilitate access to information on green, social and sustainability-linked bonds.
	Thaipat Institute	Promotes companies effectively incorporating ESG considerations into corporate strategy and decision-making processes	Releases an annual ESG 100 list with the 100 best performing companies on the Thai stock market.
	Thailand Greenhouse Gas Management Organization	Public organisation whose mission includes to develop carbon business, carbon pricing instruments, and carbon markets.	Initiated the Thailand Carbon Neutral Network (TCNN) with working groups on policy, carbon pricing, finance and innovation in 2021.

7.2 CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT IN THAILAND

7.2.1 CURRENT POLICIES, APPROACHES AND INITIATIVES FOR SUPPORTING CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

Thailand is taking relevant steps in making the financial system climate compatible as described in the following sub-sections. Overall, climate change increasingly plays an important role for Thai financial actors. A recent report by the Sustainable Banking and Finance Network (2021)²⁴³ has assessed the country to be in the “developing implementation” stage of implementing sustainable finance frameworks.²⁴⁴

There are currently 24 Thai companies on the Dow Jones Sustainability Index²⁴⁵ and 100 companies listed on the local sustainability index Thailand Sustainability Investment (THSSI) created by the Thai Stock Exchange in 2015.

SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

There is high-level political commitment by key actors of the Thai financial system to create an enabling policy environment for climate compatible investments. In 2019, the Ministry of Finance, the Bank of Thailand (BoT), the Securities Exchange Commission (SEC), the Office of Insurance Commission, and the Thai Stock Exchange (SET) formed a joint Working Group on Sustainable Finance (WG-SF), bringing together representatives of all regulators and supervisors of the Thai financial system.²⁴⁶ The Working Group facilitates a systematic approach to climate compatible financial system development and is a key strength of the Thai approach to include climate considerations into regulatory policies. The group meets regularly and provides an opportunity for exchange among the different regulatory and supervisory institutions. It is convened on the technical level and reports to the “Three Regulators Steering Committee” founded by the Ministry of Finance, BOT, SEC and OIC in 2017 as a non-statutory platform to discuss policy issues.

A key outcome of the Working Group on Sustainable Finance is the release of the Sustainable Financing Initiatives for Thailand in August 2021, which provide an overarching strategic document for transforming the financial sector.²⁴⁷ Regulators explicitly articulate that the Thai financial sector “does and should play an increasingly significant role in exerting influence over the allocation of capital towards more sustainable investments.”²⁴⁸ They further recognise their own role in supporting Thailand’s sustainability commit-

ments and pledge to implement five key strategic initiatives (KSIs) by 2025. The KSIs include the development of a sustainable finance taxonomy, improving the quantity and quality of ESG data, improving the risk-reward profile of sustainable projects, raising awareness on ESG, and building capacities of financial services practitioners, investors, and policy makers. Details of the five initiatives will be presented in the respective sections below.

While the *Sustainable Finance Initiatives* provide a systematic approach for transforming the financial system, regulators have also committed to individual actions on sustainable finance:

- The Ministry of Finance has developed a Sustainable Financing Framework under which it intends to issue green, social and sustainability bonds and loans and use the proceeds to finance and refinance existing and future government loans or expenditures.²⁴⁹ As part of its three-year strategic plan 2020-2022 titled *Central Bank in a Transformative World*, the Bank of Thailand will work with financial institutions to integrate sustainability in their business and operational models.²⁵⁰
- The SEC’s Thai Capital Market strategic plan 2020-2022 includes an action item on the development of a Sustainable Capital Market Roadmap.²⁵¹
- The OICs Insurance Development Plan 2021-2025 includes a goal to make all insurance companies to invest in and contribute to sustainable projects.²⁵²

The Bank of Thailand is currently considering formulating further policy directions that would support repositioning the Thai financial sector to better take into account new global realities such as the digital economy and environmental risk.²⁵³ To support the policy formulation process the BoT in February 2022, published a consultation paper, which lays out proposals for respective policy directions.²⁵⁴ Feedback received by stakeholders is currently assessed. To further detail potential policy direction in the area of environmental risks, the BoT in August 2022 published a directional paper titled “Transitioning towards environmental sustainability under

the new Thai financial landscape”. It provides guidelines for “driving the financial sector to prepare for environment-related changes while also assisting the business sector and the public in transitioning smoothly towards an environmentally friendly economy”.²⁵⁵ Besides reiterating earlier initiatives on establishing a green taxonomy and developing a data platform for ESG, the paper also outlines plans of the BoT to issue policy guidelines for financial institutions’ business operations that take into account environmental factors.

In 2019, all sixteen members of the Thai Banking Association (TBA) signed the Sustainable Banking Guidelines for Responsible Lending which were later also signed by the Association of International Banks that represents 20 foreign banks operating in Thailand.²⁵⁶ The guidelines are a general commitment to sustainable finance and include a requirement for signatories to define their own responsible lending strategy. They further commit banks to identify and manage climate-related risk at the portfolio level and establish internal policies and processes for addressing these risks in their lending activities.

The eight SFIs are not among the signatories of the sustainable banking guidelines. As they are government-owned, they often directly support policy objectives with linkages to sustainability such as the BAAC’s support for sustainable agriculture. It is unclear, however, whether SFIs’ lending practices are on par with their commercial peers in terms of sustainability.

Also, an SFI, the Export-Import Bank of Thailand has adopted a new strategy in 2021 which redefines its role as Thailand’s Development Bank focussing inter alia on offering support for development of new industries such as electric cars and the circular-green economy.²⁵⁷

DATA, STANDARDISATION AND DISCLOSURE

The Sustainable Banking Guidelines require banks to identify and manage climate-related risks without, however, recommending or prescribing the application of any of the established reporting standards such as the TCFD or Principles for Responsible Banking. Engagement of commercial banks with these voluntary reporting and disclosure standards has been limited so far.

With Kasikornbank currently only one of the five major Thai commercial banks is a signatory to the Principles for Responsible Banking.²⁵⁸ The bank is also a supporter of the TCFD and published a TCFD report for 2021, inter alia outlining a commitment to reach net zero by 2030.^{259 260} It further con-

ducted a climate financial driver analysis in 2020 to assess its climate-related financial risks and opportunities.²⁶¹ In January 2022, the Siam Commercial Bank became the first Thai commercial Bank to adopt the Equator Principles²⁶².

On 29 August 2022, the Thai Bankers Association launched the “ESG Declaration”. Through the declaration, TBA members commit to integrate ESG considerations into their business strategies and defining frameworks for sustainable finance to support Thailand’s transition towards a net zero society. They also commit to develop financial products that increase accessibility to finance and support their customers to achieve net zero emissions and sustainable growth.²⁶³

For capital markets, in 2017, the SEC issued a corporate governance code which requires company boards “to ensure sustainability reporting, as appropriate”²⁶⁴. There are no requirements for applying specific reporting standards. Firms can use a framework that is proportionate to the company’s size and complexity. From 2021, listed firms must annually submit ESG disclosures and companies seeking listing must also disclose their greenhouse gas emissions.²⁶⁵ These disclosures must be submitted through the so-called 56-1 One report, which must include information on companies’ environmental policy, environmental performance, greenhouse gas emissions as well as mitigation strategies.²⁶⁶

The SEC cooperates with the Thailand Greenhouse Gas Management Organization (TGO) to organise trainings for companies to prepare disclosures on their GHG emissions.²⁶⁷ Both SEC and SET identified the limited readiness of small and medium-sized companies to measure their greenhouse gas emissions as a key barrier for increasing transparency through disclosures. Measurement and verification of emissions is costly for SMEs. SEC tries to - at least partly - offset the cost by reducing annual fees for those companies that measure and verify their emissions.

The lack of capacities of SMEs to measure their emissions is also a key gap mentioned by commercial banks who require these data for reporting their scope three emissions. EXIM Thailand is currently working on financial products for decarbonised supply chain financing and some commercial banks have set aside funding to support measurement of scope three emissions.

In 2021, both the SEC²⁶⁸ and the Thai Stock Exchange²⁶⁹ became a supporter of the TCFD. There are no specific requirements associated with the supporter status. However,

supporting organisations are expected to encourage implementation of TCFD recommendations. There are currently fourteen Thai companies that are TCFD supporters, with some companies such as e.g; ThaiBev already applying the TCFD recommendations in their reporting²⁷⁰. The SEC supports the application of the TCFD standard through capacity building measures and is working together with the UK government as well as CDP and EY on different projects to strengthen disclosure in Thailand. Further activities include a survey among companies' use of TCFD standards and challenges in applying them. To make the TCFD recommendations better accessible to Thai actors, the SEC translated them into Thai and suggested areas for simplification.

As part of the Sustainable Finance Initiatives Thai regulators announced to establish an ESG reporting standard to enhance the quality of ESG reporting. The SEC and SET currently work on the establishment of a ESG data platform for which a prototype is scheduled to launch in the fourth quarter 2022. Its main objective is to enhance the quality of data inter alia by introducing ESG reporting metrics and to facilitate data analysis for investors. It is developed in close consultation with different stakeholder groups to identify those metrics that are most useful and will be aligned with global standards where possible.

Since 2022, the SEC further requires asset managers to attend mandatory ESG trainings every two years before renewing their accreditation.²⁷¹ The biannual training requirement can potentially support building capacities gradually as reporting requirements evolve in the future.

PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

The Bank of Thailand (BoT) is in the early stages of formulating prudential regulations that incorporate climate and environmental risks and developing the corresponding supervisory approaches and tools. There is general acknowledgement that climate change poses a risk on financial stability, and that Thai regulators have a shared responsibility for creating an environment for the financial sector to support the implementation of the country's sustainable development commitments.²⁷² Measures like the set-up of a Sustainable Banking Team as part of the Financial Institutions Strategy Department and membership in the NGFS reflect this awareness in BoT's operations.²⁷³

The BoT currently relies on the industry-led Sustainable Banking Guidelines as the main instrument to improve cli-

mate-related risk management by Thai commercial banks. It is developing supervisory and monitoring tools to ensure the implementation of the guidelines. While the guidelines were successful in raising awareness among banks and promote institutionalisation of ESG related disclosures, the lack of a common definition of sustainable finance and reporting standards might impede effective incorporation of climate change considerations by the industry. To mitigate these concerns, all Thai regulators committed to develop a sustainable finance taxonomy to create a consistent classification of green and non-green assets. The taxonomy development relies on a multi-stakeholder consultation process that is organised through different thematic working groups. Each group is headed by a different institution to draw on different types of expertise. A first draft of the taxonomy is expected to be published in early 2023. Reporting alignment with the taxonomy will be voluntary in the beginning and will apply for energy and transport.

As part of the Sustainable Finance Initiatives, the BoT indicated that it may begin developing sector-wide climate stress tests and scenario analysis before introducing mandatory requirements for banks and other regulated financial institutions to conduct these.²⁷⁴ BoT is currently working together with the UK to develop the required national climate scenarios as well as the conceptual framework for the stress test.

Since January 2022, the BoT requires that Thai commercial banks demonstrate that all ESG risks are adequately managed and accounted for when determining the size of capital buffers. In practice this means that the BoT will prioritise working with banks to improve their ESG risk management practices rather than increasing capital reserve requirements for specific banks.²⁷⁵

Climate and environmental considerations are not yet integrated into monetary policy, although commercial banks stress the need for setting clear, unambiguous and long-term policy signals. As the Thai financial market is currently characterised by a low interest rate environment, the scope of using monetary instruments to promote climate-related investments might be limited. Therefore, monetary instruments might be less of a priority compared with other incentives such as tax credits.

The BoT has been a member of the Task Force on the Roles of ASEAN Central Banks in Managing Climate and Environment-related Risks that studied the implications

of climate change on financial and monetary stability.²⁷⁶ Regional peer exchange with ASEAN countries can be an effective strategy to advance green central banking within the region.

MARKET SUPPORT INSTRUMENTS

Research on the state of the Thai green bond market conducted by the Climate Bonds Initiative shows that next to Malaysia, Thailand has the second largest bond market among ASEAN countries with an annual average growth of 10%.²⁷⁷ It further observes that the market has been largely dominated by government bonds while the number of corporate bonds remains relatively small. Regarding the green bond market, the study highlights that it is considered to be in its early stages of development, with 22 green bonds issued between 2018 and November 2021. 21 of these bonds were denominated in local currency. It further concludes that the Thai bond market has sufficient capacities to support the development of a local green bond market.

In August 2020, the Public Debt Management Office launched the Climate Bonds Initiative certified “Kingdom of Thailand Sustainability Bond” under the Ministry of Finance’s “Thailand Sustainable Financing Framework”, which is the first of its kind among ASEAN countries. The proceeds from the issuance have been used to invest in COVID-19 relief measures as well as in financing the construction of a new mass transit rail line in the Bangkok Metropolitan area²⁷⁸. In September 2022 EXIM Thailand issued two tranches of a green bond worth 5,000 million baht (approx. 134 million USD) in total.²⁷⁹

A main obstacle for the further development of the green bond market is the lack of local capacities to certify green finance, which results in high transaction costs. Past green bond issuances have been supported by technical cooperation through the Asian Development Bank and the International Finance Cooperation that aided the certification process. To level the playing field with conventional bonds, the SEC currently forgoes approval and filing fees to offset the additional costs related to green certification.²⁸⁰

To increase the availability of data and knowledge on ESG debt issuance, the SEC and the Thai Bond Market Association designed and launched a Green, Social, and Sustainability Information Platform which should support building local capacities on green bond issuances.²⁸¹ Green bond issuance is regulated by the SEC that published guidelines on green, social and sustainability bonds requiring issuers

to apply any “internationally accepted” green, social or sustainable bond standard.²⁸²

For renewable energy, development finance played an important role in supporting the nascent market. Concessional finance through the Clean Technology Fund for wind and solar projects, for example, enabled commercial banks to provide longer tenor loans.²⁸³

In addition, incentives for sustainable investment by the Thai Board of Investments play an important role in scaling investments in climate compatible economic development. Most of these measures consist of tax breaks for climate compatible investments. A focus is on the transport sector where electric vehicles have been identified as a key industry.¹

TABLE 9: Board of Investment policy incentives for climate compatible investment

NAME	DESCRIPTION
Grassroot economy support scheme	Supporting local organisations to develop sustainable agricultural activities such as low methane rice farming
Machinery upgrades	Three-year tax exemption for investments in upgrading machinery to reduce GHG emissions
Cold storage facilities and refrigerated transport	Investments in cold storage facilities and refrigerated transport that use natural refrigerants and reduce environmental impact will be granted 3-year corporate income tax exemptions.
Petrochemical Production	Petrochemical production facilities that use Carbon Capture Utilisation and Storage (CCUS) technologies will be granted 8-year corporate income tax exemptions.
Natural gas separation plants	If they are implementing CCUS technologies they will be granted 8-year corporate income tax exemptions.
Electric vehicles	Investment promotion policies for the production of battery electric vehicles.
E-Bikes	Tax incentives, i.e., exemption from corporate income tax for at least 3 years.

Source: Thai Board of Investment (2021)²⁸⁴.

There are several funds in Thailand that support energy efficiency and renewable energy projects. One of the most prominent examples is the Energy Conservation Promotion Fund which became operational in 1995.²⁸⁵ The fund finances the Energy Efficiency Revolving Fund (EERF) that offers zero interest loans to banks that provide on-lending for energy efficiency projects. There are currently eight banks participating in the EERF.²⁸⁶

EXIM Thailand has a number of financial products aimed at climate compatible financing. They include “EXIM BIZ Transformation Loans” and “Solar Orchestra Loans” the latter supporting the installation of solar rooftop systems for power generation. In cooperation with the Electricity Generating Authority of Thailand (EGAT), EXIM Thailand further supports activities under the EGAT “Cooling Innovation Fund”. The objective of the Fund is to promote sustainable innovation and market transformation toward climate-friendly and energy efficient cooling. It is an outcome of a NAMA Facility project supported by GIZ.

The Thai Environment Fund is currently establishing the Thai Climate Initiative (ThaiCI) which aims at enhancing climate mitigation and adaptation actions as well as capacity strengthening at sub-national level. Support for the establishment of the ThaiCI is provided by the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) of Germany, through GIZ.

LEADING BY EXAMPLE

Government institutions have been spearheading climate compatible financial system development by inter alia forming a Working Group on Sustainable Finance and becoming TCFD supporters. The Kingdom of Thailand Sustainability Bond further has been the first of its kind in ASEAN countries, supporting the development of the green bond market.

EXIM Thailand has adopted a sustainable finance framework that includes a technology exclusion list that inter alia prohibits using the net proceeds of green, social or sustainability bonds to finance assets, projects, and sectors in the following areas:

- Development, refining, and transportation of fossil fuels (including coal, oil, and gas)
- Fossil fuel power generation
- Nuclear power generation
- Weapons and defence
- Gambling and casinos
- Tobacco

About 1/3 of its portfolio is currently composed of renewable energy projects. The bank further plans to become carbon neutral by 2030. The commitment includes the banks scope one and two emissions.

CAPACITY DEVELOPMENT

Strengthening local capacities required to advance climate compatible financing is a key concern for all regulatory and supervisory authorities of the Thai financial sector. Private financial sector actors often lack the ability to measure and report GHG emissions, the ability to verify emission reductions, the ability to apply ESG reporting requirements in line with international standards as well as the ability to certify new financial products such as green bonds. Public institutions are currently still building the capacities of their staff to integrate climate considerations into regulatory and supervisory instruments such as e.g., climate stress tests.

Several of the current capacity building efforts focus on enhancing the abilities of companies to comply with ESG reporting requirements. Both SEC and SET provide support through training courses and making international standards accessible to the domestic context (e.g., through translating international standards and guidelines into Thai). Training programs of the SET have resulted in more than 120 certified ESG professionals with another 200 professionals currently receiving training.

Some commercial banks have worked individually with consultants to investigate approaches for decarbonising their portfolios.

Thai regulators are further supporting the development of the financial system through several capacity building measures:

- The SEC has organised three Green Bond Boot-camps in 2019 to develop technical know-how in the process of green bond issuance and understanding of the green bond taxonomy.²⁸⁷
- The SET offers training and advisory programmes on ESG related aspects.²⁸⁸
- The SET hosted a webinar on the TCFD recommendations with the aim to promote knowledge about climate-related financial disclosures and exchange financial and investment institutions' views in taking such information into consideration for providing loans and financial services to business.
- The BoT is working on the development of courses aiming at improving the capability of businesses to assess environment-related opportunities and risks.
- The BoT hosts the annual Bangkok Sustainable Banking Forum which targets board of directors and top executives of commercial banks. It also offers a series of workshop on sustainable banking on a quarterly basis with the support from both domestic (e.g., TBA) and international (e.g., WWF) organisations.

7.2.2 INTERNATIONAL COOPERATION

Public and private Thai financial sector actors actively cooperate with international partners on initiatives aiming at making the financial system more climate compatible. This includes technical cooperation on specific issues such as the development of a sustainable taxonomy as well as active membership in international networks such as the NGFS, and the Task Force on the Roles of ASEAN Central Banks in Managing Climate and Environment-relates Risk. When starting new activities on green finance, Thai actors mainly make use of well-established partnerships with donors. The Thai Bankers' Association for example cooperates with the International Finance Corporation (IFC) on familiarising commercial banks with the equator principles, building on existing technical cooperation.

EXIM Thailand, BAAC and EGAT have collaborated within the framework of the USD 300 million Thai investment plan under the CIFs' Clean Technology Fund (CTF). The investment plan supported mitigation actions in the energy and transport sectors by public and private actors. EXIM Thailand and BAAC acted as intermediaries for the CTF projects in the energy sector.²⁸⁹ The CTF projects included the country's first utility scale wind projects demonstrating the feasibility of wind power in Thailand.²⁹⁰

BAAC, EXIM Thailand and EGAT further implemented two projects funded through the NAMA facility. The Thai Rice NAMA, implemented by the Thai government in collaboration with GIZ, aims at mitigating emissions from agriculture by supporting rice farmers to adapt low-emission farming practices. Actors in the value chain can access funding through a revolving fund and a subsidised loan programme implemented by BAAC. EGAT and EXIM Thailand further implement the EGAT Cooling Innovation Fund, which was established through the NAMA Support Project Thailand – Refrigeration and Air Conditioning²⁹¹ (see section on market support instruments above for more details).

Further selected areas of international cooperation include:

- In 2019, SET signed a Memorandum of Understanding (MOU) with the IFC to enhance the sustainability performance of the Thai capital market, focussing on ESG related issues.
- UK PACT Green Recovery Challenge Fund: GRI partnership with CDP to deliver a capacity building

program for corporates and financial institutions to address knowledge gaps in climate-related sustainability disclosure²⁹²

- The World Bank Group’s Partnership for Market Readiness provides support for the development of the legal frameworks for greenhouse gas reporting and an emissions trading scheme.²⁹³
- The Bank of Thailand cooperates with the UK government in developing local climate scenarios required for conducting climate stress-tests
- The SEC is cooperating with CDP on capacity building for the application of TCFD recommendations

7.3 RECOMMENDATIONS

7.3.1 RECOMMENDATIONS FOR POLICIES, APPROACHES AND INITIATIVES THAT SUPPORT CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

Climate change increasingly becomes an important consideration for actors within the Thai financial sector. Awareness about the risk and opportunities associated with climate change is high – both with public as well as large private sector actors such as commercial banks. Government officials and staff in companies’ sustainability units are familiar with key climate change concepts and engage with the issue both on a strategic and technical level.

The general commitment of actors to engage with the transition towards climate compatible financial system development shows through many voluntary announcements, initiatives, and commitments to apply guidelines and sustainability standards. The next step for the Thai financial system would be to **consolidate these voluntary actions by identifying elements that can be turned into mandatory policies and regulatory frameworks**. This would help creating a level-playing field among all actors as well as stable policy signals. Private sector actors prefer clear, unambiguous and long-term policy signals over an unmoderated transition process without defined rules and regulations that apply to everyone. Mandatory policies and regulatory frameworks would also help to avoid the creation of a plethora of overlapping and potentially conflicting, voluntary standards and guidelines across

different segments of the financial system. It would also counteract criticism of greenwashing that might amplify if various voluntary standards and interpretations of climate-compatibility are applied.

Thailand’s regulators are well-positioned to moderate such a process, as they already have established a Working Group on Sustainable Finance that can serve as a platform to coordinate efforts and engage stakeholders. The Bank of Thailand’s consultation paper on “repositioning Thailand’s financial sector for a sustainable digital economy” can serve as the analytical entry point and provide a structural framework for discussion and engagement. **Additional research into potential options for adapting Thai regulatory instruments to integrate climate considerations** could further support these efforts.

Consolidation of voluntary efforts may also include assessing to what degrees these are aligned with national climate change legislation. The Office of Natural Resources and Environmental Policy and Planning (ONEP) as the lead agency under the Ministry of Mines and Natural Resources and Environment for coordinating the country’s response on climate change, could have a key role in this process.

The sustainable finance taxonomy would be a central tool for the consolidation of existing efforts and initiatives. Its development is a key step for reaching a common understanding on what constitutes climate compatible finance in line with the country's NDC target that are currently revised and likely be updated ahead of COP27 in line with the announcement made by the prime minister at COP26. It will be important to align the taxonomy with other ASEAN countries and with countries that are key trade partners for Thai companies. **To enhance the effectiveness of the taxonomy, it will be important to make it mandatory once it has successfully been piloted on a voluntary basis.**

The taxonomy will also be instrumental to create a common understanding of what constitutes green projects. Currently there is limited capacity in developing green projects among some actors e.g., in the agricultural sector. Supporting the introduction of the taxonomy with trainings in green project development, can enhance its impact.

Among the voluntary pledges and commitments, several commercial banks and larger companies have made net zero pledges. Over the medium-term, it will be important to translate these pledges into net zero roadmaps and implementation plans. Supporting this process, with additional studies and guidelines can help to increase the tangibility of these pledges. The upcoming recommendations of the *UN High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities* can provide a useful entry point for structuring such support.

Integrating TCFD recommendations into ESG disclosure requirements can be a potential way for the SEC to further strengthen reporting on climate risks.

Many financial sector actors mention insufficient capacities of SMEs to measure and verify the emissions of their operations as a key gap for applying some of the voluntary disclosure standards, especially when it comes to reporting on the emissions of their portfolios. Further **supporting capacity building for SMEs** through partnerships and learning alliances between actors that require such information could help to strengthen capacities. ONEP and TGO, as agencies with important expertise and knowledge in measuring and reporting GHG emissions, would be well positioned to support such efforts e.g.; through technical backstopping and coordination, together with regulatory and supervisory authorities in the financial system.

While an increasing number of actors are aware about climate change, it will be important to also raise awareness about the systemic risk that it poses to the economy, and the specific risks for sectors and individual institutions. BoT is already working on developing a framework and scenarios for climate stress testing. Cooperation with ONEP on climate scenarios could help to ensure that these scenarios are aligned with those used for other purposes e.g., such as adaptation planning.

Defining technologies and economic activities with high-carbon emissions, potentially linked with actively engaging potential investee companies and borrowers and considering the phase out of specific technologies, can be a powerful tool for further accelerating climate compatible system development. This could complement the existing efforts of Thai regulators to develop a sustainable finance taxonomy. In addition, it will be important to support sectors and regions currently invested in activities that have a high carbon footprint in the transition towards a net zero economy. Such support could take for example the form of just transition plans or “corridors” for respective sectors and regions allowing businesses and workers to adapt gradually to the low-carbon economy.

7.3.2 RECOMMENDATIONS FOR INTERNATIONAL COOPERATION

Financial sector actors in Thailand enjoy access to many international networks and deploy technical cooperation with various partners. Existing cooperation can be enhanced in the following areas:

- Support regulatory and supervisory authorities in assessing applicable options to adapt regulatory instruments to better take into account climate change. This can be done through funding studies, connecting Thai decision makers and experts with international peers that have successfully applied such instruments, and providing respective training and capacity building,
- Support peer-to-peer learning and mentoring approaches among SMEs on measurement and verification of GHG emissions. Closely coordinate new capacity building interventions in this area with existing projects and programs such as the cooperation between SEC and CDP.

- Support companies and commercial banks with capacity building on net zero targets and development of roadmaps for implementing these, e.g., through organising exchanges with international peers, facilitating expert reviews and mentoring arrangements.
- Support the institutionalisation of knowledge and capacities. There is a high demand by financial sector actors for climate science services, as well as technical capacity on GHG measurement, verification and accounting. Strengthening local institutions that can provide such services will support national market development and enable financial actors to rely on local expertise instead of more expensive international consultancy services.
- Support the systematisation and dissemination of knowledge and lessons-learnt on new instruments such as the issuance of green bonds, the application of international disclosure standards and climate compatible supply chain finance.
- Support the development of the sustainable taxonomy with studies on the inter-operability of the Thai taxonomy with those of other countries in the region and those of major Thai trade partners.

8



UGANDA

The following chapter focuses on climate compatible financial system development in Uganda. It describes the country context in terms of climate change and climate policy, current status of the financial system, and ongoing policies,

approaches and initiatives for supporting climate compatible financial system development. The chapter then identifies recommendations for action and for enhanced international cooperation.

8.1 CONTEXT

Economic data²⁹⁴

POPULATION (MIL)	INCOME LEVEL	GDP (BILLION USD)	GDP/CAPITA (USD)	ANNUAL GDP GROWTH (2016-2020) (%)
44.27	Low income	35.35	822	4.72

Climate Change²⁹⁵

CO2 (MT)	CO2/PER CAPITA (T)	CLIMATE RISK INDEX RANKING (2010-2019)	RENEWABLE ELECTRICITY PRODUCTION % OF TOTAL EXCL HYDRO	NATIONALLY DETERMINED CONTRIBUTION (NDC)
6.13	0.134	66	n/a	Updated in 2021

Financial sector²⁹⁶

CREDIT RATING (MOODY'S)	LENDING INTEREST RATE (%)	DOMESTIC CREDIT TO PRIVATE SECTOR (% OF GDP)	MARKET CAPITALISATION OF LISTED DOMESTIC COMPANIES (% OF GDP)	IMF FINANCIAL DEVELOPMENT INDEX
B1 (negative)	19.8	14	3.3%	0.10

8.1.1 CLIMATE CHANGE AND CLIMATE POLICY IN UGANDA

The following describes key climate-change related trends, including physical risks, transition risks and policy developments, that may drive climate compatible financial systems development in the country.

Uganda is highly vulnerable to the adverse effects of climate change, mainly due to its dependence on climate sensitive sectors such as agriculture, fisheries, and forestry. The mostly rain-fed agricultural sector employs more than 70% of the working population and contributes over 25% to the country's GDP. One of the most important sub-sectors of the agricultural sector are Uganda's fishery resources which are a key source of dietary protein and the second-largest source of export income.²⁹⁷ Hydropower is the country's main source of energy generation with the government in the process of constructing additional capacities.²⁹⁸

Depending on the region, key impacts of climate change include flash floods in arid regions as well as slow-onset flooding events in Kampala and the northern and eastern regions of the country.²⁹⁹ Further, climate change will increase the frequency and severity of droughts which will have negative effects on the availability of water, including a decrease of the water levels of the country's lakes. For major export crops such as tea and coffee, yield losses of 10-50% are expected by mid-century.³⁰⁰ Government authorities estimate that climate change impacts in the agriculture, water, infrastructure, and energy sectors could collectively amount to USD 273-437 billion, equivalent to 2.8-4.5% of cumulative prospected GDP, between 2010 and 2050.³⁰¹

In its first nationally determined contribution (INDC) submitted to the UNFCCC in 2016, Uganda committed to a list of policies and measures that would reduce greenhouse gas emissions by 22% by 2030 compared to a business-as-usual (BAU) scenario.³⁰² In an interim updated submission in October 2021, the country projected that its emission under the BAU scenario would be twice as high as communicated previously.³⁰³ The country further communicated that it is in the process of adopting a national economy-wide emission reduction target, which will be adopted by the National Climate Change Advisory Committee (NCCAC). Being responsible for 86% of the country's emissions, the Agriculture, Forestry and Land-use (AFO-LU) sector is the most important source of greenhouse gas emissions. It is followed by the energy sector whose share

is about 10.8% of total emissions. Emissions in the energy sector have almost doubled between 2005 and 2015, with the transport sector accounting for 66% of the energy sector emissions.³⁰⁴ About 57% of the households in Uganda are connected to the electricity grid with off-grid solutions providing electricity services to rural areas of the country.³⁰⁵ Uganda has passed the National Climate Change Act in 2021³⁰⁶ and adopted a Green Growth Development Strategy in 2018.³⁰⁷

Uganda has approximately 6.5 billion barrels of oil reserves of which 1.4 billion are classified as economically recoverable.³⁰⁸ A key project for the commercialisation of the country's oil is the East African Crude Oil Pipeline (EACOP) connecting the Ugandan oil fields with the Tanzanian Indian Ocean port of Tanga. Upon realisation EACOP would become the world's largest heated oil pipeline in the world.³⁰⁹ Financing of the pipeline has been reported as slow due to several key financial institutions moving away from supporting fossil-fuel projects, indicating potential transition risks associated with the oil commercialisation in the country.³¹⁰ In 2022, however, TotalEnergies and China National Offshore Oil Corporation took a final decision to invest USD 10 billion in the commercialisation of Ugandan oil.³¹¹

8.1.2 CURRENT STATUS AND DEVELOPMENT OF THE FINANCIAL SECTOR

The financial sector in Uganda is dominated by the banking sector, which in 2020 accounted for 83% of the assets in the financial system.³¹² The sector is divided into four tiers as outlined in Table 10:

TABLE 10: Categories of financial institution in Uganda

	INSTITUTIONS	AUTHORISED TO
TIER 1	Commercial banks	Hold checking, savings, and time deposit accounts for individuals and institutions in local and international currencies. Buy and sell foreign exchange, issue letters of credit, and make loans to depositors and non-depositors
TIER 2	Credit and finance companies	Accept customer deposits and establish savings accounts Make loans backed with collateral or without collateral to savings and non-savings customers
TIER 3	Microfinance deposit-taking institutions (MDIs)	Accept deposits from customers but only in the form of savings accounts
TIER 4	Village Savings and Loan Associations (VSLAs), Savings and Credit Cooperative Organization (SACCOs), and NGO micro-finance institutions ³¹³	Offer loans backed with collateral or without collateral to the public

Source: BoU (2015)³¹⁴ UIBFS³¹⁵

Institutions within tiers 1-3 fall under the supervision of the Bank of Uganda; tier 4 institutions are unregulated and mainly serve the informal sector.

Commercial banks account for 95.6% of banking sector assets, while non-bank financial institutions such as credit and finance companies (2.6%) and microfinance deposit-taking institutions (MDIs) (1.8%) only accounted for a small share. There are four systemically important commercial banks (DSIBs) in Uganda³¹⁶ whose joint share in all commercial bank assets stood at 52.6% in 2020.³¹⁷ Three of the four DSIBs are foreign-owned, and thus may profit from experiences and approaches for climate compatible finance deployed by their parent companies.

The banking sector is considered as profitable and well capitalised with capital buffers remaining well above the minimum requirements.³¹⁸ Bank assets as a percentage of GDP rose from 15% in 2013 to 21% in 2020.³¹⁹ Following the expiry of credit relief measures instigated during the COVID-19 crises, there is a short-term risk for increases in non-performing loan ratios and for a deterioration of financial stability.

Lending interest rates remain high compared to regional peers, averaging around 20% since the 1990s.³²⁰ Reasons for the country's high interest rate spread include high operational costs in the banking sector, high provisions for credit defaults, banks preference for high-yield government bonds (Yield to Maturity of up to 15%)³²¹ compared to lending and the oligopolistic market structure.³²² High interest rates and a lack of relevant customer data pose a barrier for investments into climate compatible assets, which require high capital expenditures.

Access to financial services has improved in recent years with more than half of the adult population now having access to an account at a formal financial institution.^{323 324} The country's National Financial Inclusion Strategy (NFIS) aims at reducing barriers to accessing financial ser-

vices. Only 10% of businesses surveyed in a recent study of the IFC had access to a bank loan or line of credit.³²⁵ The Ugandan informal sector accounts for about 50% of the country's GDP and banks remain cautious to lend to this segment.³²⁶ Savings and Credit Cooperative Organizations (SACCOs) play an important role in Uganda's financial system, as they served around 1 million clients in 2017. Their establishment is supported by the government-owned Micro Finance Support Centre in an effort to increase access to finance for the rural population.³²⁷

The Uganda Stock Exchange, which was founded in 1997, has two main market segments that are actively used, namely a main equity market and fixed income segment. In addition, the much smaller and younger exchange ALTX offers financial products such as ETFs. Table 11 provides an overview of key actors in Uganda's financial sector relevant for supporting climate compatible financial systems development.

TABLE 11: Key actors in Uganda's financial sector and their respective mandates

ROLE	WHO	DESCRIPTION (WHERE RELEVANT)	KEY CLIMATE-RELATED INITIATIVES
Regulator	Ministry of Finance, Planning and Economic Development (MoFPED)		Set up of climate finance unit. Plans to develop green finance guidelines and frameworks aimed at guiding banks towards greener lending.
	Bank of Uganda (BoU)	Regulatory and supervisory authority; aims to foster price stability and a sound financial system, and uphold macroeconomic stability.	Conducted survey on the state of green financing in the country's financial sector. Develops guidelines for green financing to support SMEs.
	Uganda Microfinance Regulatory Authority (UMRA)	Regulatory and supervisory authority for tier 4 financial institutions, including SACCOs.	
	Capital Markets Authority (CMA)	Responsible for the regulation and development of the capital markets.	
Banking Associations	Uganda Bankers Association (UBA)	Umbrella organisation for licensed commercial banks supervised by Bank of Uganda.	
Selected Development	Uganda Development Bank (UDB)	Government-owned development bank. Its main objective is to promote development in the agriculture, industry, tourism, housing, and commerce sectors.	
Finance Institutions	East African Development Bank (EADB)	Regional development bank owned predominantly by the governments of Kenya, Uganda, Tanzania, and the African Development Bank (AfDB)	
	The Microfinance Support Centre (MSC) Ltd	Government-owned institution with the objective to increase availability of micro-credit funds especially for agricultural cooperatives.	

8.2 CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT IN UGANDA

8.2.1 CURRENT POLICIES, APPROACHES AND INITIATIVES FOR SUPPORTING CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

Uganda is taking relevant steps in making the financial system climate compatible as described in the following sub-sections. Overall, climate compatible financial system development is still at the early stages.

SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

There is growing political momentum for climate compatible finance in Uganda with key actors increasingly recognising the critical role of the financial sector in achieving sustainable development and with growing awareness of the urgency to act on climate change. In its 2021 Green Recovery Plan, the Ministry of Finance, Planning and Economic Development (MoFPED) names greening the financial sector as a priority.³²⁹ Currently, MoFPED is setting up a specific climate finance unit, which is an important step to systematically address climate change issues in the financial sector.

ROLE	WHO	DESCRIPTION (WHERE RELEVANT)	KEY CLIMATE-RELATED INITIATIVES
Major commercial banks	Stanbic Bank, Centenary Rural Development Bank, Absa Bank, and Standard Chartered Bank		
Selected Microfinance Institutions (MFIs)	Pride Microfinance Ltd (MDI) (Pride), Nile Microfinance		Offer green credit products
Stock Exchanges	Uganda Securities Exchange (USE), ALTX East Africa Exchange	USE is the principal stock exchange in Uganda and operates under the authority of the CMA.	Member of the UN Sustainable Stock Exchanges (SSE) initiative.
Other actors	The Uganda Institute of Banking and Financial Services (UIBFS)	Provides training and certification in banking and finance	Active partner in the project "Green Banking Africa - Capacity Building on Green Energy and Climate Finance" ³²⁸
	Uganda Cooperative Savings and Credit Union (UCSCU)	Umbrella organisation for SACCOs in Uganda	
	Uganda Energy Credit Capitalization Company (UECCC)	Government-owned company with the mandate to coordinate investments into renewable energy sources in the country. Offers refinancing, partial risk guarantees, subordinated debt finance and interest rate buydowns.	
	Agricultural Credit Facility (ACF)	Partnership between the Government of Uganda, Uganda Development Bank and tier 1-3 institutions.	
	Yield Uganda Investment Fund (Yield)	Agribusiness impact fund set up by the European Union through the International Fund for Agricultural Development (IFAD) and the National Social Security Fund of Uganda	
	Advocates Coalition on Development and Environment	Independent public policy research and advocacy think tank working on green economy issues	

There are also plans to integrate climate financing in upcoming regulation on capital markets, especially with respect to green bonds. In 2021, the Bank of Uganda undertook a survey on the state of green financing in the country's financial sector.³³⁰ It is further designing a policy on green finance.^{331 332} In 2021, MoFPED, together with the Uganda Development Bank also co-hosted the World Development Finance Forum in Kampala 2021. At the forum, Uganda's president urged financial institutions operating in Uganda to align their business strategies with the development needs of the country.³³³

DATA, STANDARDISATION AND DISCLOSURE

As of today, there is no green taxonomy and little systematic disclosure of investment-relevant data and information on issues related to climate compatible development in the country. In the context of developing Uganda's Green Growth Development Strategy, some work has been undertaken on defining what constitutes "green measures". Moreover, MoFPED plans to develop green finance guidelines and frameworks aimed at guiding banks towards greener lending.³³⁴ The Bank of Uganda in early 2022 announced that it is in the process of developing guidelines for green financing to support Small and Medium Enterprises (SMEs).

There is currently no guidance by the regulatory authorities for companies in Uganda to integrate environmental, social and governance (ESG) issues in their operations. While the Uganda Securities Exchange (USE) is a member of the Sustainable Stock Exchanges (SSE) initiative, there are no written ESG guidelines. A survey among companies in East Africa revealed that more than 40% of company's CEOs still see ESG regulation as a risk to their financial performance.³³⁵ However, some of Uganda's regional peers have undertaken steps towards introducing disclosure requirements.³³⁶

PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

There is little indication available at the moment, that climate change related risks are systematically analysed and addressed in Uganda's financial sector. Recognising the importance of this, the Bank of Uganda has entered into conversations with donors on climate stress testing for the country's financial system.

MARKET SUPPORT INSTRUMENTS

The Government of Uganda has initiated a number of public finance mechanisms, such as the Uganda Energy Credit Capitalisation Company, that support climate compatible

development in the country and aim to mobilise private capital, often with the support of international development partners. Existing green public finance mechanisms mostly focus on the energy sector. To support the development of a green bond market, MoFPED has named the issuance of green bonds as a priority policy option for greening Uganda's economic recovery.³³⁷

Several interviewees referred to a lack of a pipeline of bankable green projects and of climate compatible businesses as a major barrier to increased green investments and to the issuance of green bonds and operationalisation of green credit lines or similar instruments.

With a growing awareness of climate change related investment risks and opportunities, microfinance institutions have started to offer loan products for financing solar panels, other clean energy solutions and water purification systems, partly making use of mobile payment services offered by telecom providers.³³⁸ It is expected that there is further potential for green product innovation in the microfinance sector, including on agricultural loans in combination with climate compatible agricultural extension services.

LEADING BY EXAMPLE

Public institutions in Uganda's financial sector are still in the early stages of proactively addressing climate compatible financial systems development.

Sectoral ministries have some experience with mainstreaming climate change considerations into sectoral policies and public budgets. Uganda Development Bank recently received a sustainability leader award and is looking into more systematically integrating data on GHG emissions into its investment decisions. It can be considered a first mover on green finance. Equity Bank Uganda has launched an environmental conservation and climate financing initiative to facilitate clean energy generation and increase the adoption and purchase of innovative clean energy technologies that directly impact people's health, incomes and the environment in Uganda and other countries within East and Central Africa.^{339 340} The Ministry of Finance and Development Planning is a member of the Coalition of Finance Ministers for Climate Action.

CAPACITY DEVELOPMENT

There are limited technical and institutional capacities of financial sector actors to systematically address climate change issues within Uganda's financial sector. Existing

capacities are mostly focused on “green finance” market segments where practical experience has been gained in the past, such as for the development of climate change mitigation projects under the Clean Development Mechanism (CDM) of the Kyoto Protocol and in the context of the voluntary carbon market. With growing high-level awareness on climate change-related investment risks and opportunities, there is a need for additional technical capacities, including for determining the short- to mid-term materiality of climate risks and how to integrate these into investment decision making, and for data collection and analysis.

8.2.2 INTERNATIONAL COOPERATION

International cooperation on green finance has mostly focused on supporting access to international climate finance, mainstreaming climate change issues into national budgeting processes and into the development of specific financial instruments.

Notable initiatives include:

- GIZ through the IKI-project DIAPOL-CE supports a training programme titled “Green Banking Uganda - Capacity Building on Green Energy and Climate Finance”. The training programme is directed towards financial institutions and clean energy market sector players interested in scaling up lending activities to decentralised renewable energy and energy efficient technologies.³⁴¹ GIZ also supports a study on innovative climate finance mechanisms and how they could be adapted to the Ugandan context.
- The Agence Française de Développement (AFD) provides Ugandan banks with a reduced-rate credit facility totalling USD 35 million for investments in renewable energy production facilities. The initiative is supported by technical assistance for Ugandan banks.³⁴²
- UNDP is supporting an analysis on how climate change can be integrated into capital markets development.
- The Islamic Development Bank is supporting a green bond roadmap for Uganda.
- UDB receives support from the Food and Agriculture Organisation of the United Nations (FAO) and Agriculture Organisation of the United Nations (FAO) to establish a climate finance facility to mobilise green investments.³⁴³
- Through the NDC Partnership’s economic advisory support MoFPED received assistance in developing climate change mainstreaming guidelines for the financial sector.³⁴⁴
- The Uganda Green Enterprise Finance Accelerator (UGEFA) provides access to finance for green enterprises through facilitating tailored loans and direct acceleration support. On the one hand, UGEFA provides Business Development Support for green enterprises in group and one-on-one formats to build their financial capacity and strengthen their business models. On the other hand, UGEFA works alongside banks to co-create opportunities to increase accessibility and tailoring of loans to green business models and technologies.³⁴⁵

8.3 RECOMMENDATIONS

8.3.1 RECOMMENDATIONS FOR POLICIES, APPROACHES AND INITIATIVES THAT SUPPORT CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

As described above, public and private actors in Uganda are starting to become more active in supporting a climate compatible financial system. The following actions could strengthen this process:

- There is an increasingly high level of awareness and political commitment for addressing climate-related risks and opportunities in Uganda's financial sector. This could be strengthened and formalised by referencing climate-compatibility in key policy and strategy documents.
- With the increasing political momentum for climate compatible financial system development, the development of a climate compatible (or green / sustainable) finance roadmap, ideally through a broad, participatory process, could be a way to build political momentum and stakeholder buy-in, and to develop the analytical base to prioritise interventions.
- The following interventions may be part of such a wider roadmap process, but in the absence of the latter could also be addressed separately.
 - Establishing a sector-wide working group that includes all relevant government bodies in the financial sector, including MoFPED, BoU, CDMA, UMRA, and the Ministry of Environment, as the main responsible agency for climate change. Such a working group could be coordinated by the newly formed climate finance unit at MoFPED. Structure and function of such a working group may be informed by examples from other countries including South Africa, Thailand and Mexico.
 - Developing a climate-scenario analysis and stress test which explores climate impacts and risks to the financial system under a range of potential climate pathways.
 - Developing a taxonomy of what constitutes green and climate compatible financing put into the context of key social issues such as poverty reduction, food security, social justice and economic growth. As with the broader process for the development of a climate compatible finance roadmap, a multi-stakeholder process for defining the taxonomy may be similarly important as the final taxonomy itself. The stakeholder process may be used to increase political commitment, awareness on green investments as well as on their benefits and complementarity with social development goals. The development of the taxonomy may be informed by the experiences of mainstreaming climate change into sectoral policies and budgets which has taken place in Uganda in the past years. Vice versa, an agreed-upon definition of green or climate compatible investments may benefit future mainstreaming efforts.
 - Undertaking stakeholder consultations with the private sector.
- To advance market development for green bonds in the country, it would be useful to adjust international green bond standards to the Ugandan context as required.
- The Bank of Uganda may profit from becoming a member of the “Network for Greening the Financial System” (NGFS) and of the Sustainable Banking and Finance Network (SBFN).
- It is recommended to work with private sector actors and industry associations on improving data availability from companies and investment projects on ESG and climate change aspects. Data collection should be aligned with international standards where appropriate, but still tailored to the country context and available capacities. Moreover, it is recommended to test the feasibility of introducing ESG reporting requirements at the Uganda stock market
- Providing support to green project developers including for early-stage project identification and feasibility

ity studies may support the build-up of a pipeline of bankable green projects.

- Specifically in the agricultural sector, there seems to be room for the development of new loan products and/or public finance mechanisms that promote climate compatible agricultural practices. Such solutions may be implemented in partnership with mobile phone companies, agricultural extension services, and microfinance institutions.

8.3.2 RECOMMENDATIONS FOR INTERNATIONAL COOPERATION

- At the moment, there is growing interest by the donor community to support green financial system development in Uganda. Whilst this is a positive trend, the increasing interest in the topic also implies a risk for disjointed activities. Robust donor coordination would increase the effectivity of interventions and limit the administrative burden on recipient agencies.
- International donors may be well placed to support stakeholder consultation processes, e.g., for the development of a sustainable finance roadmap or a green taxonomy, and to provide analytical input and technical backstopping, e.g., for the development of a climate stress test.
- With increasing high-level awareness on the importance of addressing climate risks and opportunities, donors may support efforts to develop more specific technical capacities, ideally in cooperation with national actors such as the Uganda Institute of Banking and Financial Services (UIBFS) and the Uganda Bankers Association, and building on existing capacity development programmes.
- A project preparation facility for public or private actors to develop green projects would support the build-up of a pipeline of bankable green projects. Technical assistance may also support project development for specific climate funds such as the Green Climate Fund (GCF).
- There may also be an opportunity to complement or expand existing business development initiatives, such as the Uganda Deal Flow Facility³⁴⁶, which is meant to nurture Ugandan companies for a later debut on the capital market.
- International donors may consider providing finance for the development and operationalising of new green financing mechanisms in the agricultural sector, potentially in cooperation with private sector actors such as microfinance institutions.

9



OVERALL CONCLUSIONS AND RECOMMENDATIONS

The desk-based research and stakeholder interviews conducted during this study show that a sense of urgency to address climate change is beginning to build-up among actors of the financial system. This is due to a mix of high-level political momentum at the international and national levels for inter alia commitments to reach carbon neutrality; the emergence of new international reporting standards and requirements; as well as an increased awareness of climate risks and opportunities.

At the same time, both public and private actors are often still at the early stages of building institutional capacities to integrate climate considerations into new and existing financial sector policies, processes, and products. The degree of readiness to engage with the transition towards low-emission and climate-resilient development varies among countries and actors. The following draws observations and overarching recommendations from the findings of the four case studies put into context with the general analysis of climate compatible financial systems development undertaken in chapters 2 and 3.

9.1 RECOMMENDATIONS FOR POLICIES, APPROACHES AND INITIATIVES THAT SUPPORT CLIMATE COMPATIBLE FINANCIAL SYSTEM DEVELOPMENT

The **case studies cover countries with different levels of economic and financial system development as well as ambition and focus of national climate policy.** With Mexico, South Africa and Thailand, the study includes three middle income countries, and a low-income country, namely Uganda, which also has by far the lowest per capita CO₂ footprint with 0.134 tCO₂/per capita and year. Uganda's capital market is still under development with 10 domestic companies listed on the Uganda Securities Exchange. Whereas Mexico has a relatively strongly bank-dominated

financial system, in Thailand and South Africa, capital markets play a stronger role with market capitalisation of listed domestic companies at over 100% and over 300% of GDP respectively. Of the four countries, Thailand has the most competitive financial market with low interest rates for lending and savings.

As a consequence of the different starting points, country-specific recommendations for entry points for climate compatible systems development vary between countries.



Undertaking a **thorough baseline analysis, including identifying major actors who are potential stewards for making the financial system more climate compatible**, is key for developing robust country specific recommendations. The GIZ Sustainable Finance Policy Navigator has proven to be a useful analytical framework for the baseline analysis. To further support baseline analyses, GIZ is currently also developing a comprehensive questionnaire to complement the Sustainable Finance Policy Navigator.

The comparative analysis also shows that depending on the specific country context, **different countries are leading in specific areas of financial system development where their experiences may serve as best-practice examples for other countries**. The comprehensive stakeholder engagement process run by the National Treasury in South Africa to develop a green finance taxonomy for example provides many important insights on how an inclusive process can facilitate agreement on very complex issues. Thailand has successfully established a Sustainable Finance Working Group that brings together key actors to strategically coordinate initiatives aimed at making the financial system more sustainable. In Uganda, microfinance institutions focussing on mobile money solutions have established innovative financial products coupling access to finance with advisory services that support users in better understanding and adapting to climate risks.

These examples show that **the structure of the financial system plays an important role in selecting entry points for making it more climate compatible**. In bank dominated systems, interventions focussing on regulatory and institutional reform might be more impactful. In countries with systems dominated by capital markets, engaging the various market actors around common standards and requirements may be more important.

SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

For an effective transformation to a climate compatible financial system, high level political commitment and associated political agenda setting is key. Policy makers play an important role in creating the enabling environment for a climate compatible financial system. In all case study countries, political decision makers in Ministries of Finance and Central Banks are aware of the risks climate change poses to the financial systems.

As stressed by private financial institutions in Thailand and echoed in literature, for decisive private sector action on climate change, it is key that financial regulators and sectoral policy makers in sectors such as energy, agriculture, transport and industrial development **set clear, unambiguous and long-term policy signals and provide leadership on climate compatible financial systems development**. Especially for interventions that imply restrictions for private financial institutions, such as limitations, exclusion and divestment of carbon intensive assets, private financial actors often prefer a level playing field created by mandatory policy instruments such as the phase out of specific technologies, or a carbon price. This applies especially to countries and situations where there is little opportunity for private financial institutions to profit from differentiating themselves as green. As geopolitical instability continues to persist and with the increasing frequency and severity of climate impacts, communicating the importance of climate action for socio-economic development, social justice and preservation of livelihoods becomes ever more important. This is demonstrated in the case of Mexico, where a new government has been readjusting its focus away environmental issues to social equity and local development. South Africa's approach to a "just transition" which not only aims to move to a low-emission economy but also to promote employment and livelihoods, is a good example of integrating climate action within the local development context.

Cross-sectoral coordination and stakeholder involvement processes have been an important part of political agenda-setting in all four case study countries. It is recommended to institute a working group or similar forum consisting of subgroups at the technical level and of high(er) level political decision makers, which brings together all relevant regulators bodies of the financial sector. In Thailand, financial market regulators established a "Working Group

on Sustainable Finance” that meets on a technical level and provides a forum for exchange. The group helped institutions to coordinate the initiatives of different actors and thus amplifying the signal that regulators send to the financial market. It also helped exchanging technical information and building technical capacities across institutions through peer-learning and advice.



DATA, STANDARDISATION AND DISCLOSURE

Reaching a shared understanding among actors on what type of projects and economic activities are climate compatible is an important foundation for the effectiveness of any policy intervention or market support instrument for greening the financial system. In all four countries, stakeholders, highlighted **a lack of understanding of what constitutes green investments as a key barrier** for accelerating the transition towards a climate compatible financial system. It hinders market-uptake of green financial products and poses a risk for labelling non-compatible activities as “green”, often also referred to as greenwashing.

It is recommended **to improve the granularity, consistency, comprehensiveness and materiality of ESG and climate change related information, and alignment with international standards**. Improving data and reporting may include improving existing information reported by companies and for financial products (e.g., by adding more precise definitions and more detail) as well as encouraging reporting from a wider range of companies, projects and financial products. At the same time, it is key to clearly communicate the benefits of environmental reporting to involved actors. In countries with relatively advanced capital markets, it is recommended to introduce mandatory ESG reporting requirements for companies listed at the country’s stock exchange, where feasible in line with TCFD recommendations.

Establishing taxonomies that define what activities can be considered climate compatible is a key instrument to build such shared understanding. In South Africa, Thailand and Mexico, where taxonomy development is underway, **broad stakeholder consultation processes have been a key factor for the acceptance and engagement with the instrument**. Direct involvement of stakeholders further helped regulators **to ensure that the right technical expertise is available for the taxonomy design process**. In-depth sectoral exper-

tise is often not readily available in-house and reliance on stakeholder expertise helped to bridge this capacity gap. The Bank of Thailand for example formed different working groups for the development of the Thai green taxonomy, with each working group bringing together relevant sector experts.

Given that the transition towards low-emission and climate-resilient development also has important social dimensions, **considering social aspects and a just transition is important when setting up taxonomies**. Taking a staged approach where first agreement on a more basic taxonomy is reached can be a way to keep the process manageable and build a shared understanding on different thematic blocks step-by-step. In Mexico and South Africa stakeholders agreed to a staged approach. In the case of South Africa, planning to expand the taxonomy on issues such as biodiversity later, recognising that reaching agreement on these definitions might take more time.

Making reporting on alignment with taxonomies voluntary in the beginning was highlighted as a further key step as it will allow actors to familiarise themselves with the instrument. To fully harness the potential of the instrument, it will be important however that **reporting on alignment with the taxonomies becomes mandatory in the future**. Mandatory reporting can then also be a basis for regulatory interventions and market support instruments such as minimum portfolio requirements for climate compatible assets.

Support for companies to build up capacities for reporting on alignment with taxonomies and other reporting requirements is critical. Reporting is very data intensive and often the required data is not available. **The availability of data should ideally be considered already in the design process for reporting requirements**. It may also be helpful to simplify reporting requirements for SMEs. Regulators can support reporting efforts by creating the infrastructure for reporting, collecting, and utilizing data. In Thailand, the Bank of Thailand and the Thai Stock Exchange for example are in the process of launching a data centre. In South Africa, the National Treasury supports the introduction of the taxonomy with the publication of six thematic case studies that provide different sectoral perspectives on how to use the taxonomy.

Further, when developing new reporting requirements, it is important to **build to the extent possible on the experiences and criteria used by other countries**. A lack of coor-

dination risks creating a patchwork of standards which can lead to companies facing multiple reporting requirements on climate compatibility of their activities. This might especially affect SMEs down the supply chain that provide components for products sold in different international markets and often do not have the capacity to engage with several standards simultaneously. In South Africa and Thailand, regulators compared their taxonomies with the EU taxonomy during the design process to as much as possible harmonise criteria while at the same time accounting for local differences.

Regulators, but also business associations in the context of voluntary self-commitments, can build further clarity on what activities are climate compatible through **defining activities that are associated with high carbon emissions, and by developing associated exclusion criteria**. Exclusion criteria can be an effective instrument for decarbonizing portfolios of development banks and private financial institutions. However, their overall environmental effectiveness depends on the market power of the participating institutions. To adequately reflect current socio-economic realities of sectors and regions that currently depend on high-carbon economic activities, it is important to also define “just transition corridors” for the decarbonization of these sectors, and to develop sustainable employment and livelihood opportunities for the respective regions.



PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

Adjusting regulatory instruments for climate risks appears to be a policy option that is currently not widely utilised by regulatory authorities. Globally, existing efforts remain fragmented and incomplete.³⁴⁷ None of the regulators in the four case studies apply instruments such as adjusted capital requirements, refinancing requirements, and/or rates for non-climate compatible assets, the exclusion of fossil fuels from asset purchase programmes or requirements for financial institutions to regulate credit to their customers based on environmental performance and compliance. Table 4 on page 32 provides an overview of prudential instruments for the management of climate risks that financial regulators may apply. More actively using such potentially highly impactful policy instruments will be important for further driving the transition towards climate compatible financial systems.

In particular, as a starting point, it is recommended that regulators and supervisory institutions **apply climate stress-tests for the financial system and specific financial institutions**. The South African Reserve Bank is the first of the case study countries to publish a climate change modelling framework for financial stress testing. The Bank of Thailand plans to introduce climate stress testing but so far has been lacking the detailed technical expertise.

One of the reasons for the underutilization of regulatory instruments may be that regulators are beginning to build in-house capacities to better understand and manage climate-related risks. While their leadership is generally aware of the importance of climate risks, financial regulators are still in the process of embracing the role they will need to play to implement high-level political commitments such as climate neutrality pledges. Moreover, in-depth knowledge on the technical level is still under development.



MARKET SUPPORT INSTRUMENTS

The four case study countries have been using a **wide variety of market support instruments that promote a climate compatible transformation of the financial sector, including supporting the issuance of green bonds, green credit lines, investment programs, subsidies and de-risking tools such as risk guarantees and insurance instruments**. As of today, there is less use of instruments that explicitly discourage non-climate compatible investments (see also analysis under “prudential requirements and risk management” above). As demonstrated in the example of Uganda, there is considerable potential for introducing innovative financial products by actors outside of the traditional financial sector, using mobile-enabled payments and microfinance solutions.

A transformation of the financial sector towards climate compatibility will require **a combination of different types of market support instruments, including instruments that promote green investment in specific sectors, instruments that discourage non-green investments and cross-sectoral interventions such as carbon pricing or use of monetary policy tools**. As described above under “Setting the political agenda”, private sector actors expect a clear, unambiguous and long-term regulatory framework including mandatory requirements that create a level playing field amongst competing actors.

Specifically for financial products that link domestic mitigation measures with offsetting instruments and international or national carbon markets, accounting rules for transferring mitigation outcomes have become more complex. Therefore, good accounting frameworks, a solid understanding of the reporting rules and coordination and (self-) regulation will be important to ensure the environmental integrity of carbon market instruments, as more and more companies are engaging with voluntary carbon markets instruments.



LEADING BY EXAMPLE

The analysis of the case studies has identified **examples where public institutions have been first movers in making their investment strategies climate compatible, thus setting an example for the broader financial market.** In Mexico, public actors issued the first green bond in Mexico, and the first sustainable sovereign bond linked to the SDGs globally. Moreover, the Bank of Mexico considers ESG factors in its own investment decisions. In South Africa, the National Treasury is planning to apply the taxonomy criteria for tendering on the community level.

At the same time, public institutions are still building up in-house capacities to engage with international standards such as the TCFD and some institutions prefer to focus their limited capacities on creating awareness on climate-related issues.



CAPACITY DEVELOPMENT

In all four countries, building capacities among financial sector actors on climate compatible finance is a key priority for public and private institutions alike. In-depth knowledge and expertise on climate-related aspects are often still scarce and actors highlight the **need to train more financial sector professionals on key concepts such as climate risks, ESG reporting and climate data and risk analysis.** Lack of national capacities can become a barrier for introducing new financial products as companies have to rely on external expertise that is often only available through international consulting firms, which is associated with higher costs. Thailand for example lacks local certifiers for green bond products, making new issuances more costly.

Regulators can support capacity building by integrating an understanding of climate or sustainability risk into licensing requirements for professionals working in the financial sector. In Thailand, the Securities Exchange Commission for example requires asset managers to attend mandatory ESG trainings when renewing their registration.

On a technical level, a key capacity gap raised by stakeholders from commercial and development banks are **consistent and standardised methods and guidelines for calculating scope 3 GHG emissions** i.e., those that are associated with their investment portfolios. Companies in the supply chain, especially SMEs, often do not have the capacities to measure their GHG emissions and thus do not have sufficient baseline information to calculate and report the effect of potential mitigation measures.

9.2 RECOMMENDATIONS FOR INTERNATIONAL COOPERATION

In general, **international cooperation can support in all the 5 action areas for sustainable finance** described above. Interventions should always be based upon a **robust baseline analysis and needs assessment**. Given that in many countries, many donors support activities related to climate finance and climate compatible financial system development, robust coordination among donors is needed, including between actors such as the IFC that has a long track record of supporting financial systems development. **Improved donor coordination** ensures that funds channelled towards such programs are effectively used and limit the additional burden on recipients for coordination efforts.

Clustered around the action areas, the analysis of the case studies and status quo of climate compatible financial system development suggests the following entry points for international cooperation in each of the action areas:

SETTING THE POLITICAL AGENDA AND RAISING AWARENESS

- Supporting a better understanding of the importance of climate action for socio-economic development, and preservation of livelihoods.
- Cross-sectoral and multi-institutional coordination processes among actors in a country's financial sector, e.g., for developing a roadmap for climate compatible financial systems development.
- Facilitation of peer-to-peer learning exchanges for public and private actors in different countries. Note, that there are already several platforms that offer peer-exchanges on climate compatible financial system development. It would be important to carefully assess the existing support landscape before setting up additional fora.

DATA, STANDARDISATION AND DISCLOSURE

- Coordination in the design of reporting standards and requirements, as well as facilitating international harmonisation of reporting standards while keeping processes as simple as possible for smaller actors with limited capacities such as SMEs. Potential instruments could e.g., be inter-comparability studies

between draft taxonomies and those of regional and international trade-partners relevant for the country.

- Support in embedding taxonomy development in multi-stakeholder consultation processes and by mobilising targeted expertise where in-country capacities would benefit from exchanges with regional and international experts (e.g., on applying reporting requirements in a specific sector).
- Support in setting up of reporting infrastructure and data collection practices e.g., through the establishment of dedicated data centres and data collection processes and protocols.

PRUDENTIAL REQUIREMENTS AND RISK MANAGEMENT

- Support for regulatory authorities with specific technical analysis such as the development and implementation of scenario analyses and climate-stress tests, by drawing on international best-practices and facilitating international exchange of experiences
- Support regulatory authorities to strengthen their in-house capacities for monitoring and managing climate-related risks. This can include training technical staff on the latest available science and frameworks for risk monitoring as well as facilitating mentoring opportunities between national staff and international peers working on similar issues.
- Strengthening of existing capacities in climate change modelling by adapting existing national and regional climate scenarios to the needs of financial sector actors.
- Support feasibility studies and impact assessments for integrating climate risks into regulatory instruments.

MARKET SUPPORT INSTRUMENTS

- Provision of international climate finance and technical support for existing and new financial instruments that support climate compatible development, including support for the development and scale-up of innovative solutions (e.g., based on mobile banking systems).

- Technical backstopping for financial products that link domestic mitigation measures with offsetting instruments and national and international carbon markets.
- Catalysing green bond development and issuance by:
 - Supporting the establishment of a pool of national experts that can certify green bonds along international standards to help in reducing costs of issuing green bonds.
 - Supporting stock exchanges to create green bond listings and setting up sustainable stock exchanges
 - Supporting regulatory authorities to create green bond principles and guidelines that combine international best practices with local circumstances and needs.

CAPACITY DEVELOPMENT

- Undertake a capacity needs assessment to identify the country-specific capacity needs of key actors in the financial sector. Capacity development efforts should focus on strengthening existing national institutions, including national higher education and training institutes.
- Support existing efforts of regulatory authorities to strengthen the capacities of financial sector actors to report on ESG data and fulfilling other related reporting requirements.
- Support building of skills in the understanding and application of guidelines and calculation methodologies for scope three GHG emissions, including simplified approaches for SMEs.

LIST OF INTERVIEWEES



NAME	INSTITUTION
Parinya Ngamwattana	EXIM Bank, Thailand
Ittipol Lertsakthanakul	EXIM Bank, Thailand
Jarupat Panitying	EXIM Bank, Thailand
Non Kittumthorn	EXIM Bank, Thailand
Thanida Lawseriwanich	Bank of Thailand
Piyawan Khemthongpradit	Bank of Thailand
Siripim Vimolchalao	Bank of Thailand
Kobsak Duangdee,	Thai Bankers Association
Adit Laixuthai	Kasikorn Bank
Poonsit Wongthawatchai	Bank of Ayudhaya
Darutsakorn Wisootthisin	Thai Bankers Association
Thassawan Thanakomsirichote	Bank of Ayudhaya
Phuchid Junsangsook	Bank of Ayudhaya
Rattana Phattharathanakan	Kasikorn Bank
Jittasupha Wongsiratat	Kasikorn Bank
Winita Kultangwatana	SEC Thailand
Rangrong Wichitkraisorn	SEC Thailand
Rattaya Kotcharag	SEC Thailand
Panumart Lakthan	SEC Thailand
Thawanya Sangsawang	SEC Thailand
Pimphan Wadlomyard	SEC Thailand
Soraphol Tulayasathien	SET Thailand
Suraphon Buphakosum	SET Thailand
Nareerat Santhayati	SET Thailand
Sineenart Chamsri	SET Thailand



NAME	INSTITUTION
Nareerat Panmanee	ONEP
Teerapat Kamnuantip	ONEP
Pimkarn Kattiyavong	GIZ Thailand
Chayamas Wichaidist	GIZ Thailand
Angkana Chalermpong	GIZ Thailand
Ampawa Synlanont	GIZ Thailand
Pan Piyasil	GIZ Thailand
Roland Treitler	GIZ Thailand
Heinrich Gudenus	GIZ Thailand
Kai Hofmann	GIZ Thailand
Bertha Itzel Alcerreca Corte	GIZ Mexico
Gabriela Herandy Nino	GIZ Mexico
Alex McNamara	National Business Initiative South Africa
Mandy Barnett	SANBI
Muhammed Sayed	DBSA
Pierre Venter	BASA
Yaseen Lockhat	BASA
Sarah McPhail	Treasury South Africa
Navina Sanchez Ibrahim	GIZ South Africa
Sandile Maseko	GIZ South Africa
John Kasiita Ssemulema	NDC Assist contributing to the NDC Partnership
Rebecca Nabatanzi	GIZ Uganda
Arthur Kimeze	GGGI
Angela Saul	GIZ

Note: Interviews took place between May and October 2022. In most cases interviews were conducted in groups, bringing together several representatives from one institution.

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