



GLOBAL
CENTER ON
ADAPTATION



Handbook for Financial Institutions

Climate Adaptation Finance

Module 0



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In collaboration with:



European Bank
for Reconstruction and Development

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About the Global Center on Adaptation

The Global Center on Adaptation (GCA) is an international organization that promotes adaptation to the impacts of climate change. It works to accelerate action and support for adaptation solutions by shaping policy reforms and influencing investments made by international financial institutions and the private sector. The goal is to bring climate adaptation to the forefront of the global fight against climate change and ensure that it remains prominent. Founded in 2018, GCA ensures a continuous, two-way exchange of knowledge and best practices that empower communities and drive resilient and inclusive growth worldwide.

About the European Bank for Reconstruction and Development

The European Bank for Reconstruction and Development (EBRD) is a multilateral development bank founded in 1991 with a mandate to foster sustainable, well-functioning market economies. Its governance and mandate enable it to combine finance, policy support and capacity building – powerful tools for unlocking private investment and scaling adaptation finance in the financial sector.

The EBRD works closely with private-sector and public partners to complement its adaptation financing. The Bank has financed climate-resilient infrastructure in its regions, advanced nature-based solutions, and strengthened the management of physical risk across sectors. Through financial institutions, the EBRD channels green finance via hundreds of thousands of sub loans, an intermediation model that the Bank also leverages to expand adaptation lending.

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Module 0

Primer

Seizing the Climate Adaptation
Finance Opportunity

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The resulting Handbook reflects a **co-created approach**, shaped by valuable input and feedback from participating institutions. It draws on **real-world case studies, policy tools, financial instruments, and modelling techniques** relevant to FIs operating across both emerging and developed markets.

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Acronyms

CAF Climate Adaptation Finance

EBRD European Bank for Reconstruction and Development

ESG Environmental, Social and Governance

FI Financial Institution

GCA Global Center on Adaptation

MDB Multilateral Development Bank

01

Climate Adaptation: From Risk to Opportunity

The global financial system is undergoing a structural transformation in response to the accelerating impacts of climate change and the corresponding need to enhance financial resilience. Financial institutions (FIs) are increasingly exposed to threats from the rising frequency and severity of climate-induced disasters, evolving regulatory requirements to disclose climate-related risks and shifting market expectations. These dynamics present material threats to financial stability but also create new domains for investment and innovation.

A critical area within this emerging landscape is climate adaptation finance, the allocation of financial resources toward activities and assets that strengthen the climate resilience of businesses, communities or economies by adjusting assets and systems in response to climate-related stimuli. As climate impacts intensify, adaptation action continues to fall behind needs. The United Nations Environment Programme *Adaptation Gap Report* (2025) states that while a higher relative proportion

of finance is flowing to the more vulnerable countries, including least developed countries and small island developing states, the adaptation finance gap, between adaptation finance needs and flows, is not narrowing. Bridging the adaptation finance gap will require innovative approaches and enabling factors to mobilise additional financial resources. In addition to finance, there is a need to strengthen capacity-building and technology transfer, and to enhance the effectiveness of adaptation actions.

From a financial systems perspective, climate adaptation should not be viewed solely as a risk management function but as an investment domain with measurable economic and financial benefits. Effective adaptation measures enhance the creditworthiness of counterparties, safeguard asset values, stabilise cash flows and strengthen portfolio resilience. Adaptation finance, therefore, represents both a necessity for maintaining financial stability and a strategic opportunity to align capital deployment with long-term resilience outcomes.

02

The Critical Role of Financial Institutions

FIs are uniquely positioned to drive the scale-up of adaptation finance. Through their roles in financial intermediation, risk pricing and capital allocation, FIs influence investment across sectors ranging from agriculture and infrastructure to housing, manufacturing, and water systems. As climate hazards intensify, the demand for resilient, locally tailored financial solutions is increasing. Yet, despite this growing demand, the supply of adaptation finance remains limited, constrained by institutional, informational and market barriers.

Several key challenges continue to impede the expansion of adaptation finance:



Uncertainty around climate risks quantification, particularly in translating physical climate risks into financial metrics.



Limited proven business models for adaptation that demonstrate commercially viable and scalable climate-resilient outcomes.



Capacity constraints among both borrowers and lenders to structure viable (and often novel) adaptation projects.



Policy and regulatory gaps, including insufficient incentives, unclear guidance, and inconsistent access to climate data.

Despite these challenges, the evidence is clear: FIs that invest early in climate adaptation will gain a competitive edge. There is a growing body of evidence suggesting that FIs engaging early in climate adaptation can reduce portfolio risks, support more resilient borrower outcomes, enhance their market positioning, and tap into emerging streams of concessional and blended finance.

03

Purpose of the Handbook



This Handbook for Financial Institutions: Climate Adaptation Finance, also referred to as the Handbook, is designed as a practical and strategic resource to help FIs:



Identify commercially viable climate adaptation opportunities across sectors.



Understand climate risks and their financial implications.



Integrate climate adaptation into core financial products and decision-making.



Engage clients, regulators, and development partners effectively.



Build internal capacity and institutional resilience.

Co-developed by the Global Center on Adaptation (GCA), the European Bank for Reconstruction and Development (EBRD), and financial sector experts, the Handbook reflects a co-created and evidence-based perspective. By design, this Handbook is intentionally focused on climate adaptation finance. Other relevant topics, including climate mitigation, inclusive finance, nature finance and environmental and social governance, are acknowledged as significant but are not addressed here to ensure focused guidance and practical emphasis on adaptation finance.

04

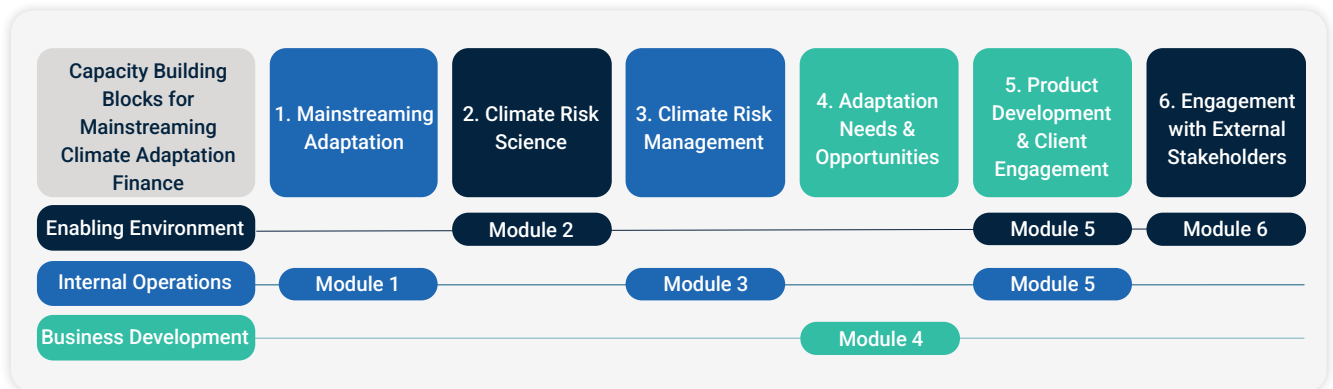
How to Use the Handbook

The Handbook is designed as a strategic planning resource, learning, and reference tool. It combines conceptual guidance, practical examples, and applied tools (e.g., templates, step-by-step approaches, and links to datasets) integrated within the Modules to help FIs operationalise adaptation finance.

Structure of the Handbook

The Handbook is organized into six modules, each addressing a distinct aspect of adaptation finance. Together, these modules form a roadmap for integrating climate adaptation across strategies, systems and services, transforming climate risks into resilience and new opportunities. The modules span three core operational layers (see Figure 1):

- **Enabling Environment:** Strategic positioning and foundational knowledge
- **FI Operations:** Internal systems, processes and governance
- **Transactions:** Design and delivery of climate adaptation-linked products and services.

Figure 1: Structure of the Handbook

Source: Authors.

Structure of Each Module

Each module follows a consistent internal structure designed for clarity and usability:

- **Module overview:** Presents the purpose, target audience, and key learning outcomes
- **Chapter abstracts:** Each chapter begins with a summary, the specific target group, and the key guiding questions addressed (see Box 1).
- **Boxes:** Contain highlighted elements such as definitions, examples and key insights.

→ **Bold terms:** Indicate in-document hyperlinks to the **Glossary**, enabling users to access technical definitions directly.

→ **Independent use:** All modules are self-contained and can be consulted independently, while together they form a comprehensive framework.

Box 1: Guiding questions within the Modules

Purpose: Each module in the Handbook is structured around a set of guiding questions that orient the reader toward key learning outcomes. These questions frame why the topic matters, what issues it addresses, and how FIs can apply the insights in practice. For example: “Why is climate action a financial imperative for FIs? How can climate change be addressed?”

Rationale: Guiding questions help users navigate complex topics by transforming high-level adaptation finance concepts into specific, actionable areas of inquiry. The questions encourage critical reflection and support stepwise learning, moving from understanding principles to identifying tools and applying them in real-world financial contexts.

How to use: At the start of each chapter, review the guiding questions to focus your reading and connect the material to your institutional context. By the end of the module, revisit the questions to assess how the concepts and examples have informed your understanding and approach.

Source: Authors.

The modules can be used in sequence or independently, depending on institutional needs. Users may start with the most relevant topics and expand as capacity

develops. Each module can be applied as a training tool, reference guide or strategic planning resource.

05

Who Should Use the Handbook

This Handbook is intended for a diverse audience within FIs and among external stakeholders. It is primarily designed for:

- **FI professionals** working in strategy, business development, sustainability, risk management, operations and client engagement who are seeking to integrate climate adaptation into institutional practices.

It may also be of interest to:

- **Public- and private-sector practitioners** involved in identifying, developing or financing adaptation projects at national, regional or local levels.
- **Policy makers, regulators, industry bodies, and development partners** involved in creating enabling environments and supporting the scale-up of adaptation finance.

Each module begins with a dedicated section outlining the content, intended audience, and learning outcomes, enabling users to tailor their engagement based on their organizational role and needs. Target groups are further refined at the **chapter level**, ensuring that each section

addresses its most relevant audience directly. **Table 1** maps the six Modules of the Handbook to their primary target audience, allowing readers to easily identify which Modules are the most relevant to their functions within an FI or stakeholder organisation.

Table 1: Target group for the Modules

Target Audience	M1	M2	M3	M4	M5	M6
FI Staff						
Executive Management; Strategy Department	X	X	X			X
Sustainability/Environmental, Social and Governance (ESG) Department	X	X	X		X	
Risk Management (incl. Credit Risk, Operational Risk, Market Risk) and Compliance Departments	X	X	X		X	
Corporate/Wholesale, Small and Medium-sized Enterprise, and Retail Banking Departments; Credit, Product and Structured Finance Departments	X	X		X	X	
Treasury and Asset Liability Management Department	X			X	X	
Human Resources	X					
Corporate Communications and External Affairs Department	X	X			X	X
External Stakeholders						
Public- and private-sector practitioners involved in identifying, developing and financing adaptation projects at national, regional or local level	X	X	X		X	
Policy makers, regulators, industry bodies and development partners involved in the enabling environment and stakeholder engagement						X

Source: Authors.

How to Use This Table

This mapping provides a starting point for users to navigate the Handbook according to their roles:

- ➔ **FI leadership and strategists** may focus on *Modules 1, 2, 3, and 6* to integrate adaptation at the strategic level.
- ➔ **Operational teams** such as sustainability/ESG, risk and compliance officers may engage more deeply with *Modules 2, 3, and 5*.

➔ **Client-facing teams** will find *Modules 2, 4 and 5* most relevant for designing adaptation-related products and services.

➔ **External stakeholders** can use *Modules 1, 2, 4, and 6* to align enabling policies, partnerships, and project implementation efforts.

06

Content of the Different Modules



This Handbook comprises six modules that guide financial institutions through the key stages of integrating climate adaptation, understanding risks, identifying opportunities, managing impacts, and scaling finance.

Module 1: Investing in Adaptation: Why Financial Institutions Have a Pivotal Role and Opportunity in Building a Resilient Tomorrow

Module 1 establishes the urgency of climate adaptation for FIs, especially those in vulnerable regions. It introduces the concept of mainstreaming climate adaptation and outlines the foundational building blocks for developing climate-adaptive portfolios and finance pipelines, setting the stage for the modules that follow. It also emphasises the importance of building institutional and human capacity within FIs, recognising that scaling climate adaptation finance requires both technical tools and skilled personnel and organizational readiness.

Module 2: Understanding Climate Change Science: What Financial Institutions Must Know

This module explains the fundamentals of climate change and its effects on economies and financial sectors worldwide. By exploring climate hazards, impacts and common challenges such as data gaps, it equips FIs to assess their risk exposure and begin identifying viable adaptation opportunities.

Module 3: Climate Risk Modelling for Financial Institutions: From Compliance to Strategy

As climate risks grow more complex, Module 3 offers an introduction to modelling techniques such as scenario analysis and stress testing, emphasising their strategic value beyond compliance.

Module 4: Where to Invest: Adaptation Needs, Finance Solutions and Tools

This module presents the business case for adaptation finance, using sector-by-sector fact sheets to highlight specific examples of adaptation solutions and their monetisable benefits and co-benefits for both borrowers and FIs. It emphasises how enhancing climate resilience can align with financial performance and profitability. The module explores a range of financing instruments and capital strategies, such as blended finance, concessional capital, resilience bonds, green bonds, and insurance, to support adaptation investments. It also offers a practical roadmap for developing bankable projects and mobilising external finance at scale.

Module 5: Tailoring Solutions to Clients: Climate Adaptation Product and Pipeline Development in Financial Institutions

This module focuses on demonstrating how thoughtfully designed adaptation-finance interventions can transform perspectives: vulnerable clients represent valuable opportunities for resilient and commercially sound lending.

Module 6: Aligning Ambition and Action: Stakeholder Engagement for Adaptation Finance

This module focuses on creating the institutional and policy-enabling environment needed to scale adaptation finance. It highlights how FIs can engage with regulators and partners to align incentives, remove barriers, and drive systemic change through collaboration and strategic leadership.

07

Support Beyond the Handbook



The Handbook is part of a broader capacity-building and knowledge support package designed to help FIs and their partners translate learning into action. This package includes complementary tools and resources that extend beyond the Handbook itself:



Masterclasses (online and onsite) providing deeper training and peer learning opportunities.



Knowledge quizzes to test understanding and track progress (see Box 2).

Links to external resources and a reference homepage will be provided throughout the modules.

Box 2: Knowledge check: how to use multiple-choice questions

At the end of each Module, a short, single-response, multiple-choice quiz is provided to help readers consolidate learning and test their understanding of key adaptation finance concepts. These quizzes are designed as self-assessment tools to reinforce comprehension and support the application of knowledge in real-world financial contexts. Every question offers **four possible answers**, with **one correct option**. This is followed by an explanation clarifying the reasoning and key learning point for each question.

Example of a Multiple-Choice Question:

Which of the following best explains why climate adaptation matters for financial institutions (FIs)?

- A. Adaptation is primarily a regulatory requirement with limited financial relevance.
- B. Adaptation only helps avoid losses from physical climate risks.
- C. Adaptation is mainly useful for large corporations in developed countries.
- D. Adaptation offers economic, financial, and non-financial benefits that enhance resilience and investment performance.

Correct: D

Explanation: Climate adaptation offers a range of benefits that go beyond avoiding losses from physical climate risks. It enhances economic and financial resilience by helping institutions prepare for and respond to climate impacts, while also improving investment performance through better risk management. In addition, adaptation supports broader non-financial outcomes such as social stability and environmental sustainability, making it a critical strategy for long-term success.

08

Process for Developing the Handbook



The Handbook was developed in **2025** through a **collaborative review and consultation process** co-led by **GCA** and the **EBRD**, with **Frankfurt School of Finance & Management, RebelGroup, and Haskoning** leading the authorship.

The resulting Handbook reflects a **co-created, evidence-based approach**, shaped through consultations with participating institutions and sector experts. It draws on real-world case studies, policy tools, financial instruments and modelling techniques relevant to FIs operating across both emerging and developed markets.

This Handbook has greatly benefited in its development process from the direction and technical contributions of FIs, development organizations, and the joint MDB climate adaptation working group, as well as pilot trainings that helped gather valuable feedback from partners. **GCA** and the **EBRD** extend their gratitude to all partners, staff, and contributors who collaborated in its development.

09

Key Reference



United Nations Environment Programme. (2025). *Adaptation Gap Report 2025*. Retrieved from <https://www.unep.org/resources/adaptation-gap-report-2025>



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